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ABSTRACT

As Ethiopia has designed and implemented numerous intensive (geographically concentrated) and minimum-package rural development programs between 1967-75, the purpose of this monograph is to: (1) trace the evolution of these package projects; (2) analyze package performances; and (3) identify the implications for Ethiopian planners and policy makers. The monograph's 7 sections are identified as follows: (1) Introduction; (2) Three Major Integrated Rural Development Projects (discussion of intensive packages focusing on organizational frameworks and major components which include: development of an improved technological package; dissemination of new practices; farm credit; lending policies; performance of the credit program; output marketing; and other components); (3) The Minimum Package Project (MPP's organization and major components); (4) Overall Assessment of the Ethiopian Package Projects (agricultural output and income; income distribution; employment; and local participation); (5) the Extension and Project Implementation Department of the 1975-80 Period (role of the intensive package projects and MPP's proposed rate of expansion); (6) Some Current Rural Development Issues (land tenure, reform, trained manpower, transportation, marketing, new technology, peasant associations, dissemination of innovations, and administrative organization); (7) Summary. (JC)

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African Rural Employment Paper No. 12

THE EVOLUTION OF ALTERNATIVE RURAL DEVELOPMENT STRATEGIES IN ETHIOPIA: IMPLICATIONS FOR EMPLOYMENT AND INCOME DISTRIBUTION

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1975

THE AFRICAN RURAL EMPLOYMENT RESEARCH NETWORK

The African Rural Employment Research Network was inititated in 1971 by a group of scholars interested in comparative analysis of the development process in selected African countries with emphasis on rural employment problems. The research program has been jointly designed by scholars in African countries, at Michigan State University and at other universities in North America. Research emphasis is being directed to Sierra Leone, Nigeria and Ethiopia. In addition, individual scholars in other countries, such as Ghana, Zaire and Tanzania, are carrying out research on rural employment problems and are members of the Network.

The research program emphasizes joint and individual studies of rural employment such as the demand for labor in alternative production systems and in the rural nonfarm sector, the migration process as a link between rural and urban labor markets and the impact of macro-economic policies on labor absorption in agriculture. Attention will be directed to developing policy models to trace the consequences of alternative strategies of agricultural development on farm output, employment, income distribution and migration and to incorporating the employment objective into project, sub-sector and sectoral analysis in developing countries.

The Network maintains links with similar research networks in Latin America (ECIEL) and Asia (CAMS) and with organizations such as the FAO, ILO and the World Bank.

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THE EVOLUTION OF ALTERNATIVE RURAL DEVELOPMENT STRATEGIES IN ETHIOPIA: IMPLICATIONS FOR EMPLOYMENT AND INCOME DISTRIBUTION**

by

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1975

TABLE OF CONTENTS

PREFACE 1

Chapter

I. INTRODUCTION 1

II. THE THREE MAJOR INTEGRATED RURAL DEVELOPMENT PROJECTS 6

The Chilalo Agricultural Development Unit (CADU) 6

Organizational Framework 7

Major Components of the CADU Package 11

Development of an Improved Technological Package 11

Dissemination of New Practices 14

Farm Credit 16

Lending Policies and Procedures 18

Performance of the Credit Program 19

Output Marketing 22

Other Components of the CADU Program 24

The Wolamo Agricultural Development Unit (WADU) 24

Organizational Framework 25

Major Components of the WADU Package 26

Development of an Improved Technological Package . . 26

Dissemination of New Practices 27

Farm Credit 29

Output Marketing 30

The Settlement Scheme 32

Other Components of the WADU Program 34

The Ada District Development Project (ADDP) 37
Major Components of the Package 38
Farm Credit 39
Output Marketing 40
Other Components of the ADDP Program 40
Some Lessons from the "Intensive" Packages 41

III. MINIMUM PACKAGE PROJECT 44
Organizational Framework of EPID and the MPP 45
Major Components of the Package 47
Dissemination of New Practices 47
Farm Credit 51
Other Development Components of the MPP 53
Some Lessons from the MPP 54

IV. OVERALL ASSESSMENT OF THE ETHIOPIAN PACKAGE PROJECTS 55
Agricultural Output and Income 56
Income Distribution 57
Employment 59
Local Participation 60

V. EPID'S RURAL DEVELOPMENT PROGRAM OF THE 1975-80 PERIOD 63
The Role of the Intensive Package Projects 63
The MPP During the 1975-80 Period 64
Proposed Rate of Expansion of the MPP 66
Problems That Could Affect MPP's Phase II Planned Rate of Expansion 66

VI. SOME CURRENT RURAL DEVELOPMENT ISSUES 70

Land Tenure Reform 70

Trained Manpower 72

Transportation 74

Marketing 75

Market Information 76

Grades and Standards 76

Storage 77

Price Control 78

New Technology 80

Dissemination of Innovations 82

Peasant Associations 84

Administrative Organization 87

VII. SUMMARY 90

APPENDICES 93

BIBLIOGRAPHY 109

PREFACE

As one analyzes rural development programs in Ethiopia and in other African countries, it is immediately obvious that rural development is an extraordinarily complicated process in which social, political, cultural, historical and ecological factors all shape the potentialities of any single program, as well as overall rural development efforts. As a result, rural development should be viewed as a learning process and each country should carefully document its successes as well as its failures. It is extremely important for local scholars in local research institutes such as the Institute of Development Research to document Ethiopia's rural development experience to date. The objective of this paper is to document the evolution and performance of Ethiopia's rural development programs to date and to draw lessons for future rural development programs as Ethiopia's provisional military government pushes forward with dual equity/production programs which are designed to improve the lives of the masses in the countryside.

I. INTRODUCTION

Ethiopia has gained considerable experience in designing and carrying out rural development programs over the 1967-1975 period. Over this period a number of alternative approaches to rural development have been tried in Ethiopia--ranging from "intensive" package programs in limited geographical areas to "minimum" package programs serving farmers located along major highways throughout the country. The purpose of this monograph is to trace the evolution of these package projects, analyze their performance to date and draw lessons for Ethiopia planners and policy makers.

Ethiopia is a nation of small subsistence farmers with an estimated per capita income of only Eth. $150 (U.S. $75) per annum. The agricultural sector generates about 60 percent of the GDP, compared with about 10 percent from the manufacturing sector, with the remainder coming mostly from sources largely dependent on agriculture. Exports consist principally of farm products (about 95 percent in value terms), with coffee alone accounting for about 50 percent of the export earnings. About 90 percent of the country's labor force is employed in agriculture related activities, and about 85 percent of the country's estimated 25 million people (some 4 million farm households) derive their incomes from small scale farming where the average holding per rural resident was estimated to be less than one hectare prior to the Land Reform Proclamation of March 1975.[1/]

[1/] On March 4, 1975, the Provisional Military Government of Ethiopia issued a proclamation declaring the nationalization of all rural lands. The full text of the proclamation is given in Appendix A. At this juncture, it should be pointed out that the field research on which this monograph is based was completed before the land reform proclamation. Consequently, most of the analyses are based on conditions that prevailed prior to this land reform proclamation.

Ethiopia holds a unique position among other African countries in that it was able to avoid the incursions of colonial powers and survive as an independent state. Unfortunately, this past history of Ethiopia weighs very heavily on its present mass poverty and grossly distorted income distribution. For example, the historical development of the land tenure system has introduced values and norms into the social system that has created vested interests by the nobility in maintaining the feudalistic socio-economic structure and rendering the central and local governments unresponsive to demands for change. Until the March 1975 land reform decree, the feudal system of land tenure had imposed an enormous social, political and economic burden on tenant farmers and the growing army of landless. Furthermore, lack of communication and transportation infrastructure is still keeping most of rural Ethiopia isolated and its agricultural areas inaccessible to major markets.

Although Ethiopia has used comprehensive planning for economic development over the past fifteen years, the small farmer was completely neglected until the Third Five Year Plan (1968-1974). The First and Second Five Year Plans, 1958-1963 and 1963-1968, respectively, concentrated on building up infrastructure for a central communications and transportation network and related services and to a limited extent for commercial farming. During the 1958-1968 period, Ethiopia had only about 100 to 120 agricultural extension agents scattered across the countryside. In addition, the poor communications system, inadequate research programs and an oppressive land tenure system (with share rents ranging from one-third to two-thirds of the output) perpetuated a stagnant subsistence economy.[2/]

[2/] For some detailed analyses on land tenure problems in Ethiopia, see Ministry of Land Reform [1970], Hoben [1973] and Gill [1974].

For these reasons the Ethiopian Government decided in 1967 to focus its agricultural development efforts on "peasant" farming, concentrating its activities on those areas that have the greatest potential for success, using the "package" approach.[3/] The first three integrated package projects that were initiated in accordance with the Third Five Year Plan are the Chilalo Agricultural Development Unit (CADU), the Wolamo Agricultural Development Unit (WADU) and the Ada District Development Project (ADDP) which were launched in 1967, 1970 and 1972, respectively.

Although the Third Plan (1968-1974) directed its attention to small farmers, only 13 percent of the directly productive investment in agriculture was allocated for small scale farming [Imperial Ethiopian Government, Planning Commission Office, 1967]. This is quite a disproportionate allocation of investment since over 92 percent of the total agricultural output was coming from small scale farming and small farmers constituted over 95 percent of the total number of farmers at the time. Nevertheless, unlike the first two plans, the Third Plan realized the importance of stressing the development of small scale farmers as the foundation for national progress.

The aims of the first three "intensive" packages or integrated rural development projects, namely CADU, WADU and ADDP, were to:

1. Raise the real incomes of small farm households, mainly with holdings of 20 hectares and less, in their respective areas.
2. Elicit participation of small farmers and local government authorities in their development efforts.

[3/] The package approach is defined as concentrating the "relevant" elements of development within a clearly defined geographical area in a coordinated manner [Imperial Ethiopian Government, Planning Commission Office, 1967].

3. Control adverse employment effects and, wherever possible, generate new additional employment opportunities.

4. Narrow prevailing income disparities by directing efforts mainly toward farmers in the lower income brackets.

5. Continuously search for suitable methods for furthering rural development nationwide.

6. Provide data for formulating better projects in the future.[4/]

By 1970 sufficient experience had been gained from CALU, and to some extent from WADU, to conclude that the "intensive" package program was too costly, in terms of both financial resources and trained manpower, for expansion on a larger scale to meet the national objective of reaching about 90 percent of the farming population in the next fifteen to twenty years [CADU, 1969; EPID, 1972]. Therefore the Minimum Package Project (MPP) was launched in 1971. The MPP, which was based on the concept of concentrating efforts on few proven innovations, was designed to reach a large number of farmers throughout the nation by employing techniques developed and/or tested by the "intensive" package projects, which were to be retained primarily as testing grounds for new innovations.

In 1971, it was decided to establish a national rural development organization as a separate department within the Ministry of Agriculture to coordinate and implement the Ministry of Agriculture's rural development projects, including the MPP. This department is known as the Extension and Project Implementation Department (EPID); and with its establishment, all previous extension programs of the Ministry of Agriculture were terminated. EPID now has an exclusive responsibility for the planning and implementation of the MPP. In addition, it is charged with the responsibility for compil-

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[4/] See CADU, March [1969]; WADU, June [1973]; ADDP, June [1974].

ing and analyzing work programs and budgets and appraising progress reports submitted by the "intensive" package projects, securing their support from foreign agencies and coordinating their activities with those of other departments of the Ministry of Agriculture and other agencies.

This monograph is divided into seven major sections and two appendices. In Sections II and III discussions of the performance of the major components of the "intensive" package projects and the Minimum Package Project, respectively, are given. Section IV contains an overall assessment of the impact of the rural development projects. A brief discussion of some current rural development issues in Ethiopia is given in Section V. The proposed direction of rural development during the 1975-1980 period, using the MPP approach, is briefly discussed in Section VI and the concluding summary is presented in Section VII. The March 1975 Land Reform Proclamation is given in Appendix A. Appendix B contains a socio-economic research agenda tailored to meet the research needs of the proposed 1975-1980 rural development program.

II. THE THREE MAJOR INTEGRATED RURAL DEVELOPMENT PROJECTS[5/]

The Chilalo Agricultural Development Unit (CADU)

Ethiopia has relied on substantial bilateral and multilateral technical assistance and financial aid for implementation of the integrated rural development programs in the Third Plan. The Swedish International Development Authority (SIDA) has been a major bilateral donor. In 1965 the Swedish Board of International Assistance commissioned a team of experts to undertake a detailed investigation of the possibilities and forms for future Swedish assistance in agriculture based rural development programs in developing countries [Nekby, 1971]. The team studied several projects in different countries, including the Comilla Project in Bangladesh and the Intensive Agricultural District Program in India and concluded that future Swedish assistance in rural development should encourage small farmer development through the "package" approach [Nekby, 1971].

SIDA has concentrated its assistance program in few countries, including Ethiopia. Ethiopia was selected as a major recipient country for at least two reasons. First, the Ethiopian Government was willing to experiment with new approaches to helping small farmers. Second, the ecology of the Ethiopian plateaus was found to parallel those found in Sweden and, as a result, it was hypothesized that the Swedish farming experience could be transferred to Ethiopia without much difficulty. A SIDA project preparation team visited Ethiopia and recommended the establishment of a rural

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[5/] The Southern Region Agricultural Development Project (SORADEP) which has been fully integrated into EPID's MPP structure in 1975, and the Tach Adiabo and Hedekti Agricultural Development Unit (TAHADU), which began full operation in late 1974, are not included in the analysis that follows.

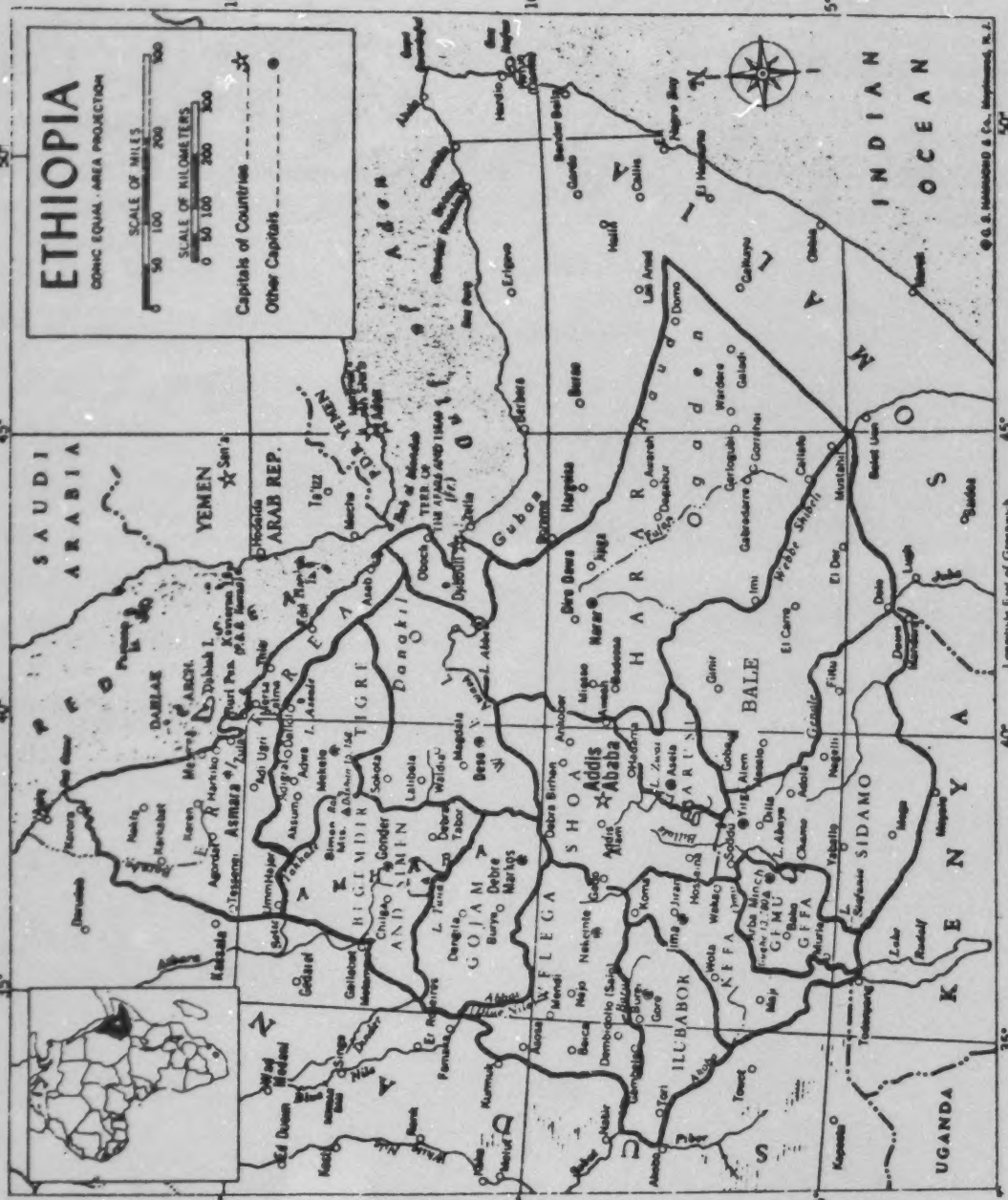
development project for Chilalo Awraja in Arussi Province[6/] (see Figure 1) because it seemed best suited for wheat and livestock production in which Sweden has substantial experience. Chilalo was accepted by both the Swedish and the Ethiopian Governments as the project site, and implementation of the program began immediately after the agreement was signed by the two governments on September 8, 1967 [Nekby, 1971]. Before assessing CADU's performance over the 1967-1975 period, a brief summary of its organizational and administrative framework will be presented.

Organizational Framework

CADU operated as an autonomous body of the Ministry of Agriculture from 1967 until the establishment of EPID in 1971, at which time it became an integral part of EPID, retaining most of its autonomy. CADU is administered by an executive director who reports to the head of EPID. CADU implements its program through four major departments and three autonomous divisions, namely: Experimentation Department, Extension and Training Department, Infrastructure Department, Common Services Department, Marketing Division, Seed Division and Cattle Breeding Division. It has a Planning and Evaluation Unit which carries out evaluations of various activities of the project, as well as the project as a whole. The Planning and Evaluation Unit is also responsible for undertaking feasibility studies of activities that have the potential of being included in CADU's programs and in developing feedback systems to improve the management of the project.

[6/] Awraja used to be an Amharic word for a sub-province. However, the Provisional Military Government of Ethiopia has renamed "provinces" as "administrative regions" and "awrajas" as "provinces". For the sake of simplicity, however, we will follow the old nomenclature in this monograph.

Figure 1.


ETHIOPIA
CONIC EQUAL - AREA PROJECTION
SCALE OF MILES
SCALE OF KILOMETERS
Capitals of Countries
Other Capitals
SAUDI ARABIA
YEMEN
ARAB REP.
P.D.R. YEMEN
SOMALI
INDIAN OCEAN
KENYA
UGANDA
SUDAN
Addis Ababa
Asmara
Harar
Dire Dawa
Jimma
Gondar
Debre Markos
Debre Tabor
Debre Birhan
Nazret
Awasa
Dilla
Negelli
Yabello
Mekele
Dessie
Assab
Massawa
Gambela
Gore
Metu
Bale Mts.
Simien Mts.
Danakil
Ogaden
Gulf of Aden
Red Sea
Lake Rudolf
Lake Stefanie
Lake Abaya
Lake Chamo
Lake Zwai
Lake Tana
Blue Nile Falls
Awash Falls
Semien
Tigre
Begemdir and Simien
Gojam
Shoa
Wollega
Illubabor
Kefa
Gemu Gofa
Sidamo
Bale
Harerge
Arussi
Welega
Eritrea
Afar
Somali
Kaffa
Wollamo
Gamo Gofa
Balé
Hararghe
Kenya
Uganda
Sudan
Djibouti
Aden
Hodeida
Sana'a
Taiz
Mocha
Hargeisa
Berbera
Burao
Erigavo
Las Anod
Bosaso
Obock
Tadjoura
Zeila
Kassala
Gedaref
Port Sudan
Omdurman
Khartoum
Juba
Wau
Malakal
Kosti
Nasir
Bor
Kapoeta
Lodwar
Moyale
Mandera
Wajir
Garissa
Isiolo
Meru
Nairobi
Nakuru
Kisumu
Eldoret
Kitale
Lodwar
Lamu
Malindi
Mombasa
Tsavo
Voi
Arusha
Moshi
Tanga
Dar es Salaam
Kampala
Jinja
Tororo
Soroti
Gulu
Masindi
Fort Portal
Kabale
Mbarara
Entebbe
Port Victoria
Port Berbera
Port Sudan
Massawa
Assab
Djibouti
Aden
Hodeida
Mocha
Zeila
Berbera
Bosaso
Hafun
Ras Hafun
Ras Kasar
Ras Dumeira
Ras Fartak
Socotra
Gulf of Aden
Red Sea
Indian Ocean
Arabian Sea
Persian Gulf
Gulf of Oman
Strait of Hormuz
Strait of Bab el Mandeb
Suez Canal
Mediterranean Sea
Black Sea
Caspian Sea
Aral Sea
Lake Victoria
Lake Tana
Lake Rudolf
Lake Stefanie
Lake Abaya
Lake Chamo
Lake Zwai
Blue Nile Falls
Awash Falls
Semien Mts.
Bale Mts.
Danakil Depression
Ogaden

The Experimentation Department, which consists of the Crop and Pasture, Agricultural Engineering, Animal Husbandry and Forestry Sections, is responsible for undertaking adaptive research in order to develop higher yielding grain and pasture varieties, tree species suitable to different ecological zones, improved but labor intensive farm implements, and livestock breeding and feeding methods. The Veterinary Department is entrusted with the production of semen from exotic bulls and the provision of artificial insemination services, training a cadre of inseminators and vaccinators and in undertaking applied research to combat livestock diseases.

The Extension and Training Department, which consists of the Training, Social Development and Information Sections, disseminates information on new inputs and farming techniques through a network of "extension areas" each consisting of about 1,500 farm households. The Training Center trains extension agents and marketing agents for CADU and the MPP.[7/] The Social Development Section has agents in most of the extension areas; these agents undertake a campaign on literacy, basic hygiene and general home economics. The Information Section assists the technical departments in disseminating information to the target population and assists in promoting self-help schemes, such as adult education and rural water supply.

The Marketing Division, through a network of trade centers located adjacent to the agricultural extension offices in all extension areas, undertakes procurement of inputs to farmers on credit and on cash, collects down payments and purchases grain from farmers for subsequent resale in the terminal markets. In line with CADU's long term strategy for the

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[7/] Marketing agents are responsible for distributing inputs to farmers, collecting down payments for credit, purchasing farmers' products and collecting credit dues from farmers.

establishment of cooperative societies to take over the credit and marketing activities, the Marketing Division also promotes primary cooperative societies. The Marketing Division is one of the three autonomous units within CADU which are designed to be self-supporting. The other autonomous divisions are the Seed and Cattle Breeding Divisions whose purpose is the production and multiplication of improved seed varieties and cross-bred cows for sale to project area farmers.

The Infrastructures Department is responsible for the construction and maintenance of buildings and feeder roads, and providing water supply through the construction of bore holes, wells and ponds on request from locally organized self-help groups. Administrative and other service facilities such as controlling the use of all funds and property, maintaining adequate records and documents, preparing annual work programmes, staff management, and operation of the car pool and boarding facilities are provided by the Common Services Department.[8/]

[8/] As of May 1975, CADU had 2,000 employees of which 1,000 are permanent and 1,000 are temporary. Of the 1,000 permanent employees, 100 are senior staff of which 5 are expatriates. Almost all of the key professional positions and departmental headships were held by expatriates (all Swedes) at the beginning, but replacement of most of the key expatriate staff with qualified Ethiopians has progressed satisfactorily. A good indication of this progress is the decline in the number of expatriate staff from about 40 in 1968 to only 5 by 1975. On the other hand, SIDA has been covering two-thirds of the yearly total budget and has agreed to continue its financial support for the 1975-1980 period. This raises some serious questions with respect to the local capacity to carry the financial burden if and when SIDA assistance is withdrawn.

Major Components of the CADU Package

The package of activities that comprise CADU's rural development program include: adaptive research on crops and livestock production, development of improved farm implements, dissemination of tested technological packages through agricultural and home economics extension programs, provision of agricultural credit and marketing services, building of feeder roads and rural water supplies, promoting soil conservation measures and small scale industries, etc. However, the dominant program activities in CADU are agricultural extension, input distribution and output marketing. The following analysis will appraise the performance of CADU's major activities over the past seven years.

Development of an Improved Technological Package

Output increasing technologies were practically nonexistent in Ethiopia when CADU was initiated in 1967. Therefore CADU included adaptive research in the major ecological zones of Chilalo as a major component of its program of work. CADU's initial research emphasis was on crops, mainly wheat and barley, and livestock production and the development of improved labor-intensive farm implements. Its farm implements research program developed prototypes of ox-drawn plows, harrows and carts, and stationary threshers and seed cleaners. But acceptance of the prototypes by small farmers to date has been very disappointing with the exception of the ox-drawn harrow.[9/] One reason for the rather slow acceptance of

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[9/] The ox-drawn plow costs Eth. $54.00 while the ox-drawn harrow costs Eth. $40.00. CADU sold about 700 ox-drawn harrows in 1974.

most of the improved farm tools seems to be that sufficient consideration was not given to environmental variations between localities and farmers' preferences as to, for example, the shape and weight of certain tools. For example, the ox-drawn plow was rejected by many farmers primarily because they found it too heavy to be carried on their shoulders from their homes to the farm, and too heavy to be pulled by their oxen.[10/]

The livestock research program has focused on upgrading local breeds of dairy cattle by cross-breeding selected local heifers with exotic European breeds by means of artificial insemination. As a result, the average milk yield per lactation has increased from about 300 liters for the local breeds to about 1,000 liters for the cross breeds, under local farmers' managerial conditions [Hunter, et al., 1974]. Improvements in beef cattle production have been neglected so far because CADU contends that the domestic market for high quality beef is very limited and the possibilities for exporting beef competitively, at least under present conditions, is deemed very poor. CADU is making good progress in developing improved breeds of sheep by crossing the local strains with exotic rams.

CADU's crop production research has focused on variety and fertilizer trials for food crops, forage crops and pastures and this research has produced some valuable results. For example, Table 1 shows that wheat varieties have been developed which on the average yield over 60 percent more than the local varieties, and are adapted to the different ecological zones of the project area. On good farms in the CADU area

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[10/] Personal conversation with the Acting Head of the Agricultural Engineering Section of CADU, September 1974.

Table 1. Average Yields of the Majcr Crops Grown in the CADU Project Area, 1967-1973 (Quintals/Hectare)

Crop	1967	1968	1969	1970	1973
Wheat:					
Local variety, not fertilized	10.6	9.8	12.1	13.1	15.2
Improved variety, not fertilized	--	--	16.9	14.5	18.1
Improved variety, fertilized	--	--	20.0	19.2	22.6
Barley:					
Local variety, not fertilized	12.6	13.0	15.3	15.9	--
Local variety, fertilized	--	--	--	19.2	--
Beans:					
Local variety, not fertilized	20.0	22.6	22.8	18.4	--
Flax:					
Local variety, not fertilized	3.6	3.5	4.9	6.0	--

Source: CADU Annual Crop Sampling Surveys, 1967-1973.

wheat yields have tripled by using improved varieties, fertilizer and improved cultural practices [Hunter, et al., 1974; Nekby, 1971; Tesfai, 1973]. In addition, CADU undertakes limited experiments on crop protection techniques and cultural practices such as date of planting, spacing and crop rotation.

Dissemination of New Practices

As the major means of introducing the tested and proven practices, CADU has an intensive agricultural extension program. The dissemination strategy centers around elected "model" farmers[11/] and demonstration plots. This is a strategy in which the extension agents work closely with one elected farmer per area of about one-hundred farmers while, at the same time, operating demonstration plots that are strategically placed near major roads, market places or churches. It was hoped that other farmers in the community will be favorably influenced by the success of the "model" farmers in using the new practices. Field days are held frequently on the agents' demonstration plots and on fields of the "model" farmers.[12/]

On the basis of the number of farmers that it has effectively reached, i.e., the number of farmers that it has assisted in using improved agricultural inputs, CADU has fallen a little short of the target it had set for the years between 1971 and 1974. After reaching a peak of 14,164

[11/] A model farmer area elects five nominees and the extension agent selects one of the five to become the "model" farmer for the area.

[12/] The "model" farmer approach was borrowed from the Comilla Project [Khan, 1974]. However, Dr. A. H. Khan--the founder of the Comilla Project--visited CADU in April 1975 and indicated that there are many differences between the functioning of the model farmers in Comilla and in CADU. For example, the model farmers in Comilla attend weekly training meetings at the Development Center, but there is no such training program in CADU.

farmers in 1971, active participation (i.e., farmers using inputs provided by CADU) has declined to 12,624 farmers in 1972 and 13,302 farmers in 1973 before it jumped to 25,205 in 1974, even though the project area has expanded during this period [Tesfai, 1973; Hunter, et al., 1974]. There is no clear indication as to why farmer participation in the CADU program has been declining. But uncertainty created by the inter- and intra-seasonal fluctuations in the price of wheat (the major commercial crop of the CADU project area), the risk associated with credit, problems related to land tenure, and weakness of the dissemination strategy are among the explanations being hypothesized [Hunter, et al., 1974; Tesfai, 1973]. For example, the sudden increase in the number of participants from 13,302 farmers in 1973 to 25,205 in 1974 seems to be mainly the function of the unusually higher wheat prices in 1973--indicating a strong correlation between wheat prices, lagged by one year, and the number of farmers effectively reached. Preliminary analysis of a "Diffusion Study at CADU" by Ingvar Jonsson [Jonsson, 1974] of the Department of Geography at Addis Ababa University seemed to indicate that a substantial number of farmers do not return to CADU to acquire inputs provided on credit after the first one or two years of participation because some start buying the inputs on cash after the first or second year; some believe that once applied fertilizer would have enough residual effect to continue being useful for several crop seasons; some believe that inputs provided by CADU are not adapted to other local conditions and hence are not profitable; and some for reasons that are not yet clearly understood. This raises some serious questions on the effectiveness of the CADU "model" farmer approach as an extension strategy to be followed year after year although it has proved to be effective in bringing about adoption breakthrough.

Farm Credit

There is a nationwide lack of either public or private institutional credit for small farmers in Ethiopia. Most land holdings are too small and fragmented to justify commercial bank loans. Prior to the March 1975 land reform proclamation the tenant was a poor credit risk because he was subject to the will of his landlord and he was unable to provide required security to be eligible for bank loans. Furthermore, the communal ownership of land in the northern provinces prevented the issuance of land mortgages for credit. Thus, small farmers had no choice but to rely on local money lenders for their credit needs even though they are charged exorbitantly high interest rates that at times were over 100 percent per annum [Henock, 1971; Tesfai, 1973].

Even the Agro-Industrial Development Bank (AIDB), which was established in 1970 primarily to meet the credit needs of the entire agricultural sector, including small farmers, has not in fact served small farmers because it found the cost of directly reaching small farmers (those cultivating less than 20 hectares) prohibitive. For example, about 52 percent of the loans made during its first four years of operation (1971-1974) were for the agricultural sector [AIDB, 1974]. But as can be seen from Table 2, only 24.2 percent of the Eth. $77.8 million loans for the entire agricultural sector were accounted for by what are roughly classified as small farmers. Even this was possible because lack of credit institutions to serve small farmers prompted the package projects to include credit as a major component of their packages and organize farmers in such a way that

Table 2. Distribution of Loans from the Agricultural and Industrial Development Bank (AIDB), 1971-74

Loans	1971		1972		1973		1974		Total	
	Eth. $ '000	%	Eth. $ '000	%	Eth. $ '000	%	Eth. $ '000	%	Eth. $ '000	%
Agriculture										
Large Scale Farms	7,384	48.4	11,249	58.6	8,682	50.7	5,961	22.8	33,276	42.8
Cooperatives a/	7,383	48.3	4,081	21.3	3,831	22.4	10,389	39.7	25,684	33.0
Package Projects	500	3.3	3,866	20.1	4,620	26.9	9,834 b/	37.5	18,820	24.2
Sub-Total	15,267	61.3	19,196	65.8	17,133	36.4	26,184	54.7	77,780	52.2
Industry	5,629	22.6	6,680	22.9	28,913	61.4	19,527	40.8	60,749	40.7
Services & Other Business	4,015	16.1	3,306	11.3	1,021	2.2	2,165	4.5	10,507	7.1
Total	24,911	100.0	29,182	100.0	47,067	100.0	47,876	100.0	149,036	100.0

a/ These are not cooperatives of small scale subsistence farmers. They are cooperatives of relatively smaller commercial farmers engaged in the production of cash crops such as sesame, cotton and coffee.

b/ The 1974 figure for package projects refers to the loan given by AIDB to the Agricultural Inputs and Marketing Services (AIMS), a subsidiary of AIDB, which serves small farmers primarily through the package projects.

Source: Compiled from Annual Reports and Management Reports of AIDB.

it would be easier and less costly for AIDB to provide credit to small farmers.[13/]

Lending Policies and Procedures

The first two years of CADU's credit program (1967/68 and 1969/70) revealed that the larger owner-cultivators were the major beneficiaries of its credit program. As a result CADU has limited participation in its credit program to owner-cultivators with less than 20 hectares and tenants with less than 25 hectares [Henock, 1971]. As a security measure, CADU requires downpayments, two guarantors (of whom one has to be the landlord if the borrower is a tenant), and a signed lease agreement between the landlord and the tenant if the borrower is a tenant. To further ensure higher repayments, group punishment has been instituted in which all participating farmers in a given model farmer area are held responsible as a group for ensuring that the annual repayment rate for their area is never below 90 percent in order to remain eligible for CADU credit programs.

13/ AIDB lends money to the package projects at an interest rate of 10 percent per annum, and the package projects in turn lend to farmers in the form of farm inputs at an interest rate of 12 percent. The extra 2 percent charged by the projects is expected to cover risk and supervision cost. But in reality the actual interest that has to be paid by farmers for the projects to break even should be much higher. For example, in 1974 CADU received Eth. $150,000 from the Agricultural Inputs and Marketing Services (AIMS) company, a subsidiary of AIDB, to distribute a fertilizer/seed package to about 25,000 farmers who on the average received about Eth. $70.00 worth of inputs on credit from CADU. Thus CADU got an input distribution fee of roughly about 8.6 percent ($\frac{\$150,000}{\$25,000} \times \frac{1}{\$70}$) per loan from AIMS. When this is added to the 10 percent that CADU pays to AIDB and the bad debts, which in good years amount to about 5 percent of all loans, the actual interest rate for small farmer loans that would allow CADU to break even is about 25 percent.

Performance of the Credit Program

Research findings [Henock, 1971; Tesfai, 1973] show that the distribution of CADU loans between tenants and landowners, and between farmers with different income levels, was disproportionately biased in favor of the larger landowners and/or the larger cultivators even though the proportion of tenants and landowners in the project area is estimated to be about the same [Henock, 1971]. It should be pointed out, however, that based on its first two years of experience (1967/68-1969/70), CADU was able to allocate a higher percentage of its loans to tenants, and/or smaller cultivators, by excluding the large cultivators from its credit program.

The significant difference in the distribution of loans between tenants and landowners is attributable to at least two reasons. First, tenants were finding it less rewarding to adopt new technologies under share-cropping arrangements where they had to pay as much as one-half of their gross output as rent while getting no compensation for any improvement that they might make. Table 4 shows that a tenant who has to pay one-half of his gross output as rent and who bears all variable costs of production finds it risky to buy the inputs provided by CADU unless he is sure that the resultant incremental yield is over 80 percent. This might be the most probable explanation for the continuous decline in tenant participation from a peak of about 39 percent in 1970/71 to about 22 percent in 1972/73. Second, the requirements for credit eligibility that were described above seem to be restrictive enough to have excluded some potential tenant borrowers.

In terms of credit repayments, CADU has to date achieved a repayment rate of about 93 percent [Hunter, et al., 1974] which is exceptionally

Table 3. CADU Distribution of Loans Between Different Classes of Farmers, 1967/68-1973/74

Year	Value of Loan (Eth. $)	Number of Borrowers		
		Total Number of Borrowers	Percent Owner-Cultivators	Percent Tenants
1967/68	15,700	189	91.5	8.5
1968/69	158,461	868	84.6	15.4
1969/70	502,875	4,769	72.4	27.6
1970/71	1,437,517	14,164	61.3	38.7
1971/72	1,108,631	12,624	69.6	30.4
1972/73	961,938	13,302	78.1	21.9
1973/74	n.a.	25,205	75.8	24.2

Source: Henock Kifle [1971]; Michael Beyene [1973] and Planning and Evaluation Unit of CADU.

Table 4. CADU: A Comparison of Benefits Per Hectare to Tenants and Landlords by Using Improved Wheat Seed and Chemical Fertilizer, 1970 a/

Wheat Yield Increases	Tenant Paying One-third of His Gross Output and Bearing All Costs		Tenant Paying One-half of His Gross Output and Bearing All Costs	
(%)	Net Return to Tenant ($)	Net Return to Landlord ($)	Net Return to Tenant ($)	Net Return to Landlord ($)
20	-50.00	13.33	-70.00	20.00
40	-36.67	26.67	-50.00	40.00
60	-10.00	40.00	-30.00	60.00
80	16.67	53.33	-10.00	80.00
100	43.33	66.67	10.00	100.00

a/ For this analysis the average yield for unfertilized local wheat is assumed to be 10 quintals per hectare [CADU, 1970] and the farm gate price is assumed to be Eth. $20 per quintal [CADU, 1971].

high by African standards. Interestingly enough, the findings [Henock, 1971; Tesfai, 1973] show that a larger percentage of the defaulters were found to be the larger farmers. On the other hand, there are indications that some of the poorest tenants have been unwillingly excluded from the credit program because they either could not afford the required downpayment or their landlords did not want to sign a lease agreement.

Output Marketing

CADU concentrates its marketing activities on wheat. But in order to support its livestock program, it purchases milk from farmers. It has organized collecting stations along the major roads where farmers bring their milk every morning to be transported to the Shola Dairy Industry in Addis Ababa. Unfortunately, the milk marketing operation has so far been unable to cover costs of collection and transportation due to the small volume of milk handled. As the result, CADU has plans of acquiring a cooler that will reduce costs by eliminating the need for daily shipment of milk to Addis Ababa [Hunter, et al., 1974].

CADU has followed different grain marketing strategies at different times. Between 1967/68 and 1971/72, the strategy was to purchase grain at harvest time and store it until prices had risen. It was hoped that such a strategy would create sufficient market competition which would lead to seasonal price stabilization throughout the project area. To generate such competition CADU purchased grains from farmers at prices that were Eth. $0.50 to $1.50[14/] per quintal higher than the prevailing local market prices [CADU, Annual Report, 1971]. The farmers' position for

[14/] The official exchange rate is Eth. $1.00 = $0.49 U.S.

disposal of their produce was strengthened considerably with this policy, but it resulted in substantial losses for CADU. For example, CADU's marketing loss during the 1970/71 season is estimated at Eth. $68,217.44 [Tesfai, 1973].

During the 1971/72 season, CADU decided to offer farmers a guaranteed price, based on a forecasted average price for the year. But due to unanticipated grain imports by the Ethiopian Grain Corporation, actual 1971/72 prices were much lower than those forecasted by CADU, leading to CADU project losses that were even higher than in the previous years.

For the 1972/73 crop season, CADU allowed farmers to bear some of the marketing risks by instituting a two payment system in which 90 percent of the going market value of the product was to be paid as a first payment, with a promise for a second payment if gains made more than covered the storage and selling costs. Unfortunately, this was found to be unacceptable to farmers as was reflected by their outright refusal to bring their produce to CADU. To avoid losing the farmers' confidence in its overall activities and to minimize the monopoly power of local merchants, CADU was forced to continue handling grains and it maintained a policy that keeps a margin of Eth. $4.00 per quintal between the going price in Addis Ababa and its marketing centers until the Government announced a nationwide price policy fixing wholesale and retail prices of all grains and livestock in early 1975.

Other Components of the CADU Program

With respect to other components which directly or indirectly attempt to reinforce overall development, namely training of staff, rural water supply, rural health, road building, soil conservation, etc., it is yet too early to make a definitive assessment of the CADU experience. Nevertheless, some observations can be made. By the end of 1973 CADU had trained 165 assistant extension agents, 35 home economics agents, and 179 marketing agents [Hunter, et al., 1974]. It has undertaken extensive surveys on surface and underground water sources, and has prepared a master plan for water development in the project area. Its rural health services program has been integrated with the Provincial Health Department in order to utilize the health facilities more efficiently. Its road building program, which began in 1972 using both labor intensive and capital intensive techniques in an effort to determine the cheapest and effective way of building rural roads, had completed about 46.5 km. of all-weather roads by the end of 1973 at an estimated cost of about Eth. $20,000 per km. [Hunter, et al., 1974].

The Wolamo Agricultural Development Unit (WADU)[15/]

Wolamo Awraja was high in the priority list of areas selected for rural development programs in the Third Five Year Plan because it was one of the most densely populated areas in the nation. Also it was believed to be an area where a rural development program would have a major impact

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15/ The headquarters of WADU are at Sodo, the capital of Wolamo Awraja, which is located in the Central Highlands some 400 kms. south of Addis Ababa.

on the entire Awraja. Therefore, when a loan application for an integrated regional rural development project was submitted to the World Bank, Wolamo was among the areas submitted for consideration.

The World Bank found Wolamo Awraja to be very suitable for its financing, primarily because the local administration was ready to support the project without any reservations, and the target population was believed to be very enthusiastic about the proposed development effort. The credit agreement between the Bank and the Ethiopian Government was signed on November 26, 1969, covering the first five-year phase of WADU which became effective in April 1970.

Organizational Framework

Like CADU, WADU is an autonomous unit of EPID administered by an executive director. It has a Planning and Evaluation Unit, although very poorly staffed, responsible for undertaking feasibility studies in order to identify areas suitable for settlement schemes and to develop an efficient system of monitoring the day-to-day activities of the project. It has a Trials Unit responsible for undertaking trials on improved cultural practices, chemical fertilizers, insecticides, improved seeds and farm implements. Its programs are implemented mainly through the Development Division, the Marketing, Credit and Cooperatives Division and the Livestock Division.

The Development Division is responsible for conducting aerial surveys and mapping of the settlement areas and the highlands that will be covered by the project. It is also responsible for settling tenant farmers (85 percent from the Wolamo Highlands and 15 percent from outside of Wolamo Awraja) at the settlement schemes, reorganizing and consolidating fragmented

holdings in selected areas in the highlands, building feeder roads and undertaking soil conservation measures, provision of water supply and provision of extension services.

The Marketing, Credit and Cooperatives (MCC) Division is responsible for establishing Marketing Centers that would procure farm inputs to farmers on credit, collecting loan repayments and purchasing farmers' output, organizing and operating coffee processing centers in the highlands, and working towards the development of each Marketing Center into a full-fledged primary cooperative society.

The Livestock Division is responsible for organizing an effective veterinary services program to control animal diseases in the project area, balancing the number of livestock with available feed supply in the highlands by developing a culling system, and providing higher milking crossbred cows on credit together with artificial insemination or bull services to farmers. The Works and Services Division, the Finance Division and the Administration Division provide a variety of services that facilitate the overall operation of the Project.

Major Components of the WADU Package

Development of an Improved Technological Package

WADU's program on adaptive research is very limited. It relies on CADU, the Institute of Agricultural Research (IAR), and the Debre Zeit Agricultural Experiment Station for a major part of its needs in new inputs, mainly improved seeds. As was indicated above, it has a small Trials Unit that undertakes variety trials, primarily on cereals. Table 5 shows that

crop yields seem to have been favorably influenced by the combined use of higher yielding seed varieties, fertilizers and improved cultural practices, such as raw planting of maize in the settlement areas in particular.

With respect to livestock development, WADU has recently started distributing selected local breeds to "model" farmers and providing services of purebred Friesian bulls at its extension centers. The WADU management believes that its approach in livestock development will minimize problems of adoptability of the crossbreeds considerably and will cost less when compared to CADU's livestock breeding program.

Dissemination of New Practices

WADU is opposed to the centralization of innovation dissemination activities around "model" farmers. It argues that the "model" farmer approach leads to a few farmers getting all of the benefits of the actual demonstration process, and it is liable to be interpreted as being designed to give preferential treatment to a selected few. Thus, any innovation demonstration is conducted on a farmer's field, with the selection of a particular farmer's field for a specific demonstration being made collaboratively between the extension agents, or "demonstrators", and an elected committee of area farmers, or "group leaders". The demonstrators, who are usually ninth or tenth grade finishers with agricultural family backgrounds, are selected from within the local communities which they are expected to serve. WADU's target was to reach 6,000 farmers by the end of its first phase; it reached 7,000 farmers by 1973 and is expected to reach the 1,000 mark by the end of its Phase I in 1975 [WADU, February 1974].

Table 5. WADU: Average Yields in Quintals Per Hectare of the Major Crops Grown in the Project Area, 1971/72 a/

Crops	Pre-Project Estimated Yields (1969)	World Bank Appraisal Team's Projections for Yields in 1978	Actual 1971 Yields
Highland			
Maize	8.0	13.0	20.0
Wheat	9.0	12.0	17.0
Teff	5.5	8.5	7.0
Settlements (Lowland)			
Maize	12.0	18.0	24.0
Cotton	1.4	5.6	10.0
Chilies	1.0	5.0	9.0

a/ When comparing the pre-project estimated yields with the Appraisal Team's projected 1978 yields and actual 1971 yields, one finds it difficult to justify at the first glance, the relatively higher levels of yields attained as early as 1971. But a comparison of the pre-project estimated yields with yield estimates under traditional farming systems and those using improved seeds and chemical fertilizer, shows the actual 1971 yields to be very reasonable. In fact, it is not at all clear as to how the Appraisal Team arrived at those projections which seem to be very underestimated.

Source: WADU, Annual Report, 1971/72.

Farm Credit

As was the case with CADU, it was necessary for WADU to include credit as a major component of its program. But its lending policies and procedures differ from those of CADU in at least three major ways. First, WADU does not have any explicitly stated eligibility restrictions, in terms of tenancy status and farm size, as long as the participating farmer is within its project areas.[16/] Second, signed lease agreements are not required from participating tenants. WADU only requires farmers to present two guarantors acceptable to the Credit Screening Committee of their area. Third, in addition to production credit in kind, WADU provides cash loans for consumption purposes at a time when farmers are very likely to borrow from local moneylenders at exorbitantly high interest rates for holiday celebrations.

A comparison of Tables 3 and 5 shows that relatively larger quantities of improved inputs have been distributed on credit within the CADU project area. A number of factors have contributed to this. Not only was the number of participating farmers greater at CADU, but also cultivated area per participant is significantly larger. The median land holding under cultivation in the CADU project area is about 3.0 hectares compared to only about 0.5 hectares for the WADU project area [Tesfai, 1973]. Besides, relatively larger quantities of improved seeds were distributed by CADU because carefully selected and tested high yielding varieties adapted to the different microclimates of Chilalo were developed.

16/ Implicitly, however, WADU follows the overall EPID policy of serving farmers cultivating 20 hectares and less. Since most Wolamo farmers fall in the lower bracket of this category, the question of farm size has not posed any serious problem to the project.

Table 6 shows that tenants in WADU receive a small percentage of the credit which is the same pattern as was found in the analysis of CADU's credit program. Less than 15 percent of the participants in the WADU credit program during the 1970/71 and 1971/72 crop seasons were tenants even though about 40 percent of the Wolamo farmers are pure tenants [WADU, 1972]. This is particularly interesting because, given WADU's rather liberal credit eligibility and collateral requirements, one would expect a higher rate of tenant participation in the credit program. Perhaps tenants did not find it worth taking the risk of purchasing yield increasing inputs on credit under the prevailing sharecropping arrangements.

WADU has attained an exceptionally high repayment rate--97 percent--for its first three years of operation (1970/71-1972-1973). Also, as was the case with CADU, the small farmers and/or tenants had a better record of timely repayments than the owner-cultivators.

Output Marketing

The WADU Marketing, Credit and Cooperatives Division handles both cash crops such as coffee, ginger and chilies, and subsistence crops such as teff, wheat and maize. Since Wolamo is a net importer of grains, WADU perfers not to handle the subsistence crops as farmers are able to get higher prices in their local markets. However, farmers have pressured WADU to buy their grain because they think that WADU can pay higher prices than local traders. WADU decided to continue handling the marketing of

Table 6. WADU: Distribution of Loan Between Different Classes of Farmers, 1970/71 - 1973/74

Year	Value of Loan (Eth. $)	Number of Borrowers		
		Total Number of Sales	Percent Owner-Cultivators	Percent Tenants
1970/71	80,169	3,923	88.76	11.24
1971/72	159,339	4,791	87.86	12.14
1972/73	303,960	7,040	n.a.	n.a.
1973/74	n.a.	10,000	n.a.	n.a.

Source: Compiled from WADU's Planning and Evaluation Files.

subsistence crops, although it knows that it stands to loose in doing so in order to maintain the farmer's overall confidence in the project.

WADU's marketing strategy is to let farmers participate in any risk involved with unexpected price declines. This is accomplished by making first payments amounting to 60 percent of the anticipated sale price when a farmer submits his produce to WADU and second payments if gains made exceed selling costs. The major problem with this strategy has been the inability of forecasting product prices to guarantee that both first and second payments are made to farmers. For example, WADU was not able to make second payments during the 1971/72 season because the prevailing prices forced it to store most of the products it bought from farmers in stock for more than a year and because there were no credit mechanisms designed to alleviate such problems. Interviews with farmers indicate that the failures in making second payments could generate a mistrust of the project among farmers, particularly because WADU's first payments were usually smaller than the prices that local traders offer.

The Settlement Scheme

The first effort to resettle farmers from the overcrowded highlands of Wolamo Awraja was made by Germame Neway, the then Awraja Governor, who resettled twenty-eight families in the lowlands of Wolamo at Abela in 1959. The settlement scheme, however, languished after the departure of the Governor in 1960. A new Governor, Dejazmatch Wolde Semagat, tried to revitalize it in 1966 with an additional settlement scheme in the lowlands at Bele. Upon WADU's initiation in 1970, 110 settlement families were living at Bele and another 590 of settlers were living at Abela [Tesfai, 1973].

One of the major Government objectives in initiating WADU was to develop the cheapest means of undertaking viable planned settlement programs using the already established settlement schemes at Abela and Bele. For WADU Phase I (1970-1974), the plan was to reorganize the settlement plots of the 700 households who have already been settled, and to settle another 1,050 highland families, 75 percent from Wolamo Awraja and 25 percent from other parts of Ethiopia [WADU, June 1973], on 5 hectare plots of which 2 hectares are to be readied for planting before the settlers move in. Settlement for WADU Phase I was completed in June 1974 when all available land was occupied [WADU, August 1974]. Seven-hundred old settlement plots were reorganized, but only 747 new settlers were accommodated in comparison to the 1,050 that were planned to be settled by July 1974 [WADU, February 1974].17/

WADU has in some cases found the presence of old settlers to be more of a hinderance than a help to the orderly organization of settlement plots. Because most of the old settlers were used to grazing their livestock on the unoccupied land surrounding their settlements, they were opposed to WADU's ideas of a planned layout of settlement plots which implied less grazing area per settler and consequently a reduced number of livestock. Furthermore, those old settlers who had only two hectare plots were not easily attracted by the five hectare plots that were properly laid out because they did not want to be isolated from their communities. The social and cultural structure of most of the old settlers was not disrupted when they originally migrated to the settlement schemes because most of them came

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17/ Recent communications with the Planning Evaluation and Liaison Division of EPID has revealed that the settlement program for WADU Phase I will be extended until June 1975 and that the number of new settlers will increase from 747 to 922.

from the same villages in groups, but the scattered settlement strategy of WADU has threatened to destroy that semi-communal structure. Besides, future development of some basic infrastructure such as schools, clinics, water and electricity supplies will be relatively more expensive with a scattered settlement scheme than a settlement scheme based on villagization. Another problem of major concern is the danger of fragmentation of plots created by relatives of some settlers moving into the settlement areas. Even if there is no danger of fragmentation, it is difficult to support large households because the plots were designed to support a household with a maximum of five members.

The settlement costs are given in Tables 7 and 8. Cost per settler is approximately Eth. $3,800, 40 percent of which is expected to be recovered through a settlement tax over a twenty year period. Although these costs of the WADU settlement program are lower compared with other planned settlement schemes in Ethiopia,[18/] it seems unlikely that the government will have the financial and trained manpower to repeat this approach on a larger scale. However, some of the components may be incorporated in new land development and settlement schemes, such as the ones the Government has planned in southeastern Ethiopia.

Other Components of the WADU Program

WADU's other major achievement has been in the area of soil conservation where about 130 kms. of contour terraces, protecting some 700 hectares from water erosion, have been completed by 1972 using voluntary local

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18/ For example, a settlement program of the Afar nomads in the Awash Valley by the Awash Valley Authority (AVA) cost about Eth. $16,250 per settler on a 2.5 hectare holding [Goering, undated].

Table 7. WADU: Estimated Costs of Settling 1,750 Farmers Over a Six-Year Period (1970-1976), 1972

Type of Cost	Cost (Eth. $)	Percent of Total Cost	Cost Per Settler (Eth. $)
Non-recoverable Costs			
Headquarters and Administration	1,112,000	19	635
Extension and Settlement	700,000	12	400
Training and Trials	375,000	6	214
Marketing and Crops	600,000	10	343
Aerial Photos and Mapping	175,000	3	100
Settlers' Food	125,000	2	72
Sub-Total	3,087,000	52	1,764
Recoverable Costs			
Conservation, Roads and Clearing	1,687,000	28	964
Farm Credit Inputs	612,000	10	350
Sub-Total	2,299,000	38	1,314
Contingencies (10 Percent)	539,000	9	308
Grand Total	5,925,000	99	3,386

Source: WADU Project Direction Files.

Table 8. WADU: A Breakdown of Costs of Preparing One Family's Settlement Plot, 1972

Type of Cost	Cost Per Settlement Family (Eth. $)
Minor roads and trucks	115
Mechanical clearing	165
Soil conservation	230
Cultivation	104
Water development	155
Total	769

Source: WADU Development Division Files.

labor force. Little or no progress has been made on rural water supply and consolidation of holdings and destocking in the highlands. WADU also has a Training Center which provides short-term (four to eight weeks) training to its demonstrators and occasionally for a few selected farmers.

The Ada District Development Project (ADDP)

The Ada District was selected as the site for an integrated rural development project by a research team from the Stanford Research Institute [Stanford Research Institute, 1967] and was identified as such in the Third Five Year Plan because it " . . . exemplifies traditional Ethiopian highland agriculture" [Ministry of Agriculture, 1970]. Furthermore, Ada is close to the major markets, being only about 50 kms. southeast of Addis Ababa. Transportation facilities in the Ada District are relatively good, knowledge of the District and its people is better than most other areas in Ethiopia and some agronomic information of the area, including crop responses to improved inputs, has already been compiled by the Debre Zeit Experiment Station.[19/] Thus, it was felt that experience gained within Ada would have wide replicability throughout most of the Ethiopian highlands [Ministry of Agriculture, 1970].

ADDP was, therefore, initiated to serve primarily as an experimental unit to test rural development approaches that have not been attempted by CADU and WADU. ADDP was also planned to be different than the CADU and WADU projects because it was designed to be a catalytic innovator by

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[19/] Debre Zeit which is 45 kms. southeast of Addis Ababa is the home of the Agricultural Experiment Station of the College of Agriculture, Addis Ababa University and the headquarters of ADDP.

utilizing and coordinating available facilities and programs of local and national government and private agencies for its development efforts. The first five-year phase of ADDP, which effectively started in November 1972, is jointly financed by the Ethiopian Government and the United States Agency for International Development.

Like CADU and WADU, ADDP is an autonomous unit of EPID administered by a project manager. It had originally adopted an organizational framework similar to that of CADU and WADU to provide a package of services in agricultural extension, home economics, credit, marketing, cooperatives, promotion, road building and rural water supply. But on the basis of the recommendation of an evaluation team [Zerai, et al., 1974] its plan of work has been revised since late 1974. As the result, ADDP's autonomy in relation to EPID has diminished considerably as it has become more closely controlled by EPID, in the format of a "super" minimum package project and its high level staff and budgetary allocations have been reduced. Furthermore, the experimental nature of its activities and its aim to serve primarily as a testing ground for a variety of rural development approaches have been scaled down.

Major Components of the Package

Unlike the other integrated rural development projects, ADDP is fortunate in having an agricultural experiment station that has been operating in its project area for several years. ADDP works very closely with the Debre Zeit Agricultural Experiment Station in developing technological packages for farmers which are suitable to the varying ecological zones of Ada. For disseminating the package of innovations tested and/or developed

to farmers, it has adopted CADU's strategy of the "model" farmer and demonstration plot approach.

Farm Credit

ADDP has a credit program open to all farmers in its project area who are cultivating less than 10 hectares. Like CADU, it was requiring that tenants have a signed lease agreement with their landlords to be eligible for credit prior to the March 1975 Land Reform Proclamation. In 1973 a total of 412 farmers were extended credit as compared with a goal of 256 farmers and in 1974 a total of 1,085 farmers received credit as compared with the goal of 512 [ADDP, October 1974]. Distribution of the 1963 credit (Table 9) shows that about 58 percent of the borrowers were tenants compared with about 32 percent landowners and about 10 percent tenant-owners. It is estimated that about 78 percent of the farmers in Ada are tenants [Ministry of Agriculture, 1970; Ellis, 1973].

Table 9. ADDP: Distribution of Credit to Farmers in the Ada District, 1973/74

Year	Value of Loan (Eth. $)	Number of Borrowers			
		Total Borrowers	Percent Landowners	Percent Tenant-Owners	Percent Tenants
1973	43,660	412	31.55	10.2	58.25
1974	157,636	1,095	44.50	1.7	53.80

Source: ADDP, "Ada in Brief" [September 1974].

Output Marketing

As was the case with CADU and WADU, ADDP has difficulty in determining what should be the role of the Government in providing marketing services to small farmers. In its first year of operation (1973) ADDP offered farmers a commodity loan of 60 percent of the market value of the staple food grain--teff--on delivery at the project warehouse. The teff was cleaned, graded and stored by the project for about seven months before it was finally sold. Any resultant increase in the price of the product in excess of the storage charge, which amounts to one percent of the commodity loan per month, accrues to the farmer. Encouraged by its success in the first year, ADDP had decided to continue with its commodity loan program. It has constructed modest storage facilities at various village markets in order to provide those farmers that come from considerable distances to the market an alternative to immediate sale. Such a program forces farmers to absorb a substantial proportion of the risk and other costs involved in marketing.

Other Components of the ADDP Program

ADDP has programs on home economics, road building and rural water supply. As of early 1975, five home economics agents in five different Development Centers have been giving classes on gardening, poultry, child care and nutrition. Surveying for road and water supply construction programs throughout Ada is completed. By mid-1975 five deep wells have been drilled and thirty kms. of feeder roads have been constructed at the cost of Eth. $500 per km.

Some Lessons from the "Intensive" Packages

CADU, WADU and ADDP provide a number of lessons for the design and implementation of rural development projects in other parts of Ethiopia. Before Ethiopia adopted the package approach as the major approach to rural development, it had a limited number of agricultural extension agents who provided technical advice to farmers who had neither the backing to get the required inputs nor the means to acquire them. This approach thus proved to be ineffective in assisting small farmers. However, through the establishment of CADU, the effectiveness of the package approach in reaching small farmers has been amply demonstrated.

The importance of establishing small research units within regional intensive package projects cannot be minimized, as has been effectively demonstrated by CADU's research unit in the development of high yielding wheat varieties and small tools and implements. However, it should be realized that for countries like Ethiopia research has to be carried out on a range of ecological zones by a national organization, such as the Institute of Agricultural Research (IAR), in order for the innovations to have broad replicability.[20/] Nevertheless, this does not imply that the research component of the intensive packages should be de-emphasized. In fact, their research program should be broadened to incorporate experimentation on various programs of the projects, such as different approaches to agricultural extension and different approaches to the

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[20/] Some measures are being taken towards this end as indicated by the collaboration of EPID and IAR to establish seven research sub-stations in selected ecological zones beginning in 1975.

development of cooperatives. But for the research results to benefit the poorer sections of the population, attention should be given to the special needs of small farmers. Otherwise important research results, such as improved technical packages, may lead to eviction of tenants, landlessness and unemployment as has been demonstrated within the CADU project area prior to the March 4, 1975 Land Reform Proclamation.

The provision of services like credit and marketing should be undertaken after examining how essential these are to the overall project and how they can best be provided. The experience of CADU, WADU and ADDP shows how difficult it is to operate a viable marketing program when the project unit controls only a small part of the marketable surplus of the region. The CADU and WADU experience also shows that it might be difficult to modify the marketing setup once it has been initiated by projects such as CADU as the participating farmers may then feel that they are being unfairly treated. The marketing experience of all "intensive" packages seems to suggest that it might be more efficient to use the existing private marketing system by improving its operation through construction of infrastructure for transportation and storage and provision of market information.

In the provision of credit the two important problems are providing facilities to all segments of the rural population and ensuring repayment of the credit. But these two objectives may be incompatible. In the design of projects, assurance of repayment of credit is often sought by providing credit only to the "credit-worthy" and credit-worthiness is judged by the ability of the recipient to provide security and a certain amount of down payment. However, the poorest sections of the population are unable to provide the security or raise the down payment. The experiences show that

such requirements do prevent the participation of the poorer farmers. The operation of WADU shows that down payment requirements are not necessary for a high repayment rate. The provision of consumption loans by not preempting the farmer's income for repayment of high interest loans also seems to lead to a better repayment performance. The use of local committees for juding credit worthiness of farmers is a useful approach as they are in a better position to judge the farming capacities of the individual, which might be a better guarantee of repayment than financial ability, particularly as it is often the richer farmers who default on their loans.

The operation of ADDP, which was set up to test rural development approaches that have not been attempted by CADU and WADU by mobilizing available resources from local and central government agencies, has shown that it is difficult to mobilize resources and coordinate the activities of different government agencies for effective promotion of rural development. It has also shown that rural development approaches different than the ones adopted by CADU and WADU, i.e., rural development based on primarily the distribution of improved productive inputs together with an extension service and output marketing, are difficult to come by.

When one considers the limitation of the replicability of innovations developed by the intensive package projects, the high cost and trained manpower requirements, their impact on regional inequities and the absence of tax instruments to siphon off a portion of the incremental benefits generated by the projects for use in developing other regions, one wonders

how long they can operate under the pretext of "pilot" projects. The operation of the intensive packages to date clearly indicates that the critical shortage of trained manpower and financial resources that the country is facing warrants de-emphasizing their role in the 1975-80 period.

III. THE MINIMUM PACKAGE PROJECT

By 1971, the idea of the "minimum" package approach started gaining ground when it was concluded that the "intensive" package approach was too costly to be expanded on a national scale. Also in 1971 EPID was established as the coordinating and implementing agency for all Ministry of Agriculture based rural development projects with the exclusive responsibility for the implementation of the Minimum Package Project (MPP).

EPID started full operations of the MPP in 1971 with technical assistance from SIDA and has since received World Bank loans to finance its 1973-75 program. The basic aim of the MPP is to provide farmers with a minimum package of innovations through change agents who are located along all-weather roads throughout the country. This approach is designed to be less costly per farmer served than CADU, WADU and ADDP and is assumed to be capable of serving a larger percentage of the farming areas in Ethiopia in the next fifteen to twenty years.

Organizational Framework of EPID and the MPP

EPID consists of three major divisions, namely: Planning, Evaluation and Liaison Division, Common Services Division and the Extension Division. The Planning, Evaluation and Liaison Division is primarily responsible for monitoring the MPP. It is also entrusted with the evaluation of all projects under the umbrella of EPID, planning new programs and projects for EPID, performing a variety of essential economic analyses and acting as the liaison between EPID headquarters and the semi-autonomous "intensive" packages. The Common Services Division provides services such as staff recruitment, financial control and preparing annual work programs and budgets for all EPID operations.

The Extension Division of EPID, which consists mainly of an Agronomic Group, Animal Husbandry Group, Credit and Marketing Group, Cooperative Promotion Group and Home Economics Group, carries the major responsibilities for implementing programs of the MPP. The Agronomic Group provides technical advise with respect to agronomic problems, undertakes fertilizer and variety trials on different micro-climates, trains extension staff and provides professional services to the intensive packages on request. The Animal Husbandry Group, which started its operations in mid-1974, will deal with animal health, cross-breeding and destocking. The Credit and Marketing Group is primarily concerned with the supply of inputs on credit through marketing centers that are scattered throughout the MPP areas and expects to undertake output marketing activities by the end of 1974. The Cooperative Promotion Group works closely with the Credit and Marketing Group in trying to develop the marketing centers into primary cooperative societies.

Field activities of EPID for the MPP are carried out in three stages, i.e., observation areas (OA), Demonstration Areas (DA) and Minimum Package Program Areas (MPP areas) which are consecutive steps in the development of an area into a Minimum Package Project. After an area is selected for undertaking extension activities, it is designated an OA with one extension agent being assigned to conduct variety and fertilizer trials and general survey of the area under the supervision of the Agronomic Group of the Extension Division of EPID. Depending on the results of the observation period, which could be two years or less, an EPID team decides on whether to advance the OA into a DA or exclude it from further extension activities. If promoted to a DA, one extension supervisor, two extension agents and one marketing assistant are assigned to work with selected "model" farmers--through whom the demonstration program is to be promoted.

Under the guidance of the extension supervisor, available innovations are demonstrated on "model" farmers' fields and demonstration plots of EPID extension agents. After a year of demonstration activities, a DA becomes a full-fledged Minimum Package Area staffed by one extension supervisor, five extension agents and at least five marketing assistants. For subsequent years, plans are for the number of field staff to increase as the number of participating farmers and the number of extension activities increase. Each extension agent is expected to cover an Extension Area of about 10 to 15 kms. along an all-weather road and about 5 to 10 kms. on both sides of the road. Five Extension Areas constitute a full-fledged MPP area. Each MPP area, which extends over 75 kms., is designed to serve about 10,000 farm families, 75 percent of whom are expected to fully participate in the program within the first ten years [EPID, October 1972].

Major Components of the Package

The MPP started with a package of a few proven innovations hoping that it would gradually increase the intensity of its package and broaden national coverage as more and more of the limiting resources become readily available. To date the program for the MPP consists of primarily agricultural extension and distribution of improved farm inputs (mainly fertilizer and improved seeds) on credit.

Dissemination of New Practices

As can be seen from Table 10 the number of extension agents per MPP area is planned to increase for the first five years of an MPP as the number of participants and the volume of extension activities increase. The major means of conveying new innovations are the trial fields which are operated by the extension agents and the "model" farmers. The one hectare trial fields are strategically located in places that are frequently visited by farmers; the trial fields compare the traditional farming systems with a system using fertilizer, insecticides, improved varieties, implements and cultural practices. Field days are held in which area farmers, local officials and community leaders are invited when the trial plots are ready to show a clear distinction between the traditional and the improved methods.

The "model" farmers who are expected to work very closely with the extension agents are selected by the agents from five nominees from the area farmers, primarily on the basis of their eligibility for participation according to EPID regulations and their willingness to cooperate with the extension agents. A "model" farmer is expected to lead in the adoption of

Table 10. MPP: Projected Expansion of Extension Activities per MPP Area, EPID, 1971/76

Extension Staff	Observation Area	Demonstration Area	MPP Area by Year				
			1	2	3	4	5
Supervisors	--	1	1	1	1	1	1
Agents	1	2	3	3	4	5	5
Assistant agents[a/]	--	--	2	2	3	4	5
Model farmers	--	10	45	85	100	100	100
Participating farmers	--	80	300	1,000	2,650	4,100	5,400
Farmers per agent	--	40	60	200	377	455	540
Area cultivated per farmer (Ha.)[b/]	--	5	4.63	3.49	2.38	2.00	1.76
Proportion of cultivatea area fertilized (percent)	00	20	28	40	51	62	73

[a/] This does not include marketing assistants.

[b/] The projected decline in average area cultivated per farmer over time is due to the implicit assumption that the majority of the early participants (early adopters) will be the relatively larger cultivators and the majority of the laggards will be the smaller cultivators.

Source: Compiled from MPP Program, Loan Application to IBRD/IDA, July 1972.

new innovations and eventually convince at least about 75 percent of the farmers in his area to participate in EPID's extension program, summon farmers for meetings with change agents, help agents in screening applicants for the purchase of inputs on credit and pressure farmers to repay their credit [EPID, August 1974]. No compensation is paid to "model" farmers to perform these different functions other than the initial benefits of demonstrations of fertilizer, improved seeds, etc., that the agents undertake on their plots.

It was planned that the Minimum Package Program will expand at the rate of ten MPP areas or fifty Extension Areas per year [EPID, July 1971]. Between its inception in 1971 and August 1974, EPID has initiated a total of 48 full-fledged MPP areas, 26 Demonstration Areas and 28 Observation Areas for a total of 346 Extension Areas scattered throughout the country and covering all provinces [EPID, August 1974]. A rapid increase in the number of extension centers has taken place in 1974 as a result of the added responsibility delegated to EPID for rehabilitation of drought affected areas in Wolo, Tigray and Harar Provinces. Perhaps as the result of the convincing evidence of the value of improved inputs, as can be seen from Table 11, mean yields of most of the major crops of the Central Highlands have increased significantly. Through EPID's extension program about 4,000 farmers are believed to have been effectively reached in 1971, about 12,700 in 1972 and about 25,400 in 1973 [EPID, August 1974; Tesfai, 1973].

Table 11. MPP: Crop Yields from MPP Areas, 1973

Crop	Farmers' Fields			Demonstration Trials of Extension Agents			
	Mean Yield Improvement of Local Varieties Due to Fertilizer (Quintals/Hectare)			Mean Yield of Improvement of Improved Over Local Varieties (Quintals/Hectare)			Percent of Trials with Better Yield Than Local Varieties
	Fertilized	Unfertilized	Difference	Improved	Local	Difference	
Teff	10.9	8.0	2.9	11.5	8.0	3.5	64.4
Wheat	14.9	10.6	4.3	18.5	10.6	7.9	81.7
Barley	13.3	10.1	3.2	17.5	10.1	7.4	48.9
Sorghum	23.0	19.0	4.0	--	19.0	--	--
Maize	64.8	43.8	21.0	66.8	43.8	23.0	92.1

Source: Compiled from "EPID Phase II--Proposal for the Expansion of EPID During the 1975-1980 Period," August 1974.

Farm Credit

Credit under the Minimum Package Program is limited to credit in kind in the form of improved farm inputs as is the case with CADU and ADDP. Based on CADU's experience of tenant eviction, EPID has restricted participation in the MPP's credit program to farmers cultivating less than 20 hectares. To ensure repayments of its loans, EPID requires downpayments and two guarantors from each borrower. Prior to the March 1975 Land Reform Proclamation, EPID was in addition requiring a signed lease agreement from his landlord if the borrower is a tenant. All farmers within a given "model" farmer area are jointly held responsible for a timely settlement of all of the loans given in the area if the area is to remain eligible for future credit programs under the MPP.

Table 12 shows that landowners accounted for disproportionately larger quantities of fertilizer distributed on credit through the Minimum Package Program. Tenants constitute at least 50 percent of the farming population of all MPP areas but not more than 12 percent of all beneficiaries of the credit program of the MPP are tenants. Reasons for such a low tenant participation include the disincentive that feudalistic land tenure systems create on the tanant's decision to adopt new practices that involve risks associated with credit [Gill, 1974; Tesfai, 1973] and unwillingness on the part of some landlords to sign a lease agreement in order to allow their tenants to participate in the credit program of the MPP [Tesfai, 1973]. With respect to loan repayments, at least 90 percent of all MPP loans given out by EPID have been repaid [EPID, August 1974].

Table 12. MPP: Distribution of EPID Loans in MPP Areas, 1971-73

Year	Amount of Fertilizer (Quintals)	Amount of Seed (Quintals)	Credit Participants		
			Number or Sales a/	Percent Tenant b/	Percent Owner-Cultivators
1971	9,460.3	222	4,691	11.2	88.8
1972	20,174.0	200	12,706	12.1	87.9
1973	35,160.0	860	25,424	15.4	84.6
1974	78,475.0	2,000	55,000		

a/ Number of sales does not necessarily equal the actual number of farmers served because one farmer could account for more than one sale.

b/ The percentage for the tenant category includes farmers who both own and rent land. For example, for 1973 only, 4.9 percent were pure tenants with the remaining 10.5 percent being farmers who both own and rent land.

Source: Compiled from "EPID Phase II--Proposals for the Expansion of EPID During 1975/76-1979/80," EPID, August 1974.

Other Development Components of the MPP

Until now the MPP has not offered output marketing services to farmers even though it is realized that the provision of yield increasing inputs on credit is only a partial solution to farmers' production problems in the absence of a fair price relationship between what farmers receive for their produce and what they pay for their inputs. In the future, however, it is hoped that output marketing will become a major component of the MPP with the establishment of cooperative societies.

Even though EPID had plans to integrate animal husbandry into the MPP's extension program ever since 1972, practically no work has been done so far in the field of animal husbandry other than preparing a long term work program. With respect to farm implements, EPID has been demonstrating the CADU developed plows, harrows and ox-drawn carts in most MPP areas. But actual distribution of improved farm implements to farmers was not possible because the prototypes developed by CADU were found to be unacceptable to farmers except the ox-drawn harrow which was not unavailable for sale in sufficient quantities [EPID, August 1974]. Soil conservation measures such as drainage of water logged lands and erosion control though afforestation are being undertaken in few areas.

EPID established the Home Economics Section of the Extension Division of the MPP in 1972/73. At the end of 1973, eighteen home economics assistant agents were scattered in different MPP areas throughout the country [EPID, August 1974]. Based on an evaluation of the home economics program, EPID plans to upgrade the home economics agents to the level of its agricultural extension agents in order to improve its services for

women. It also has plans on initiating a program in horticulture in order to assist the home economics program.

Some Lessons from the MPP

Lessons learned from the operation of the MPP are similar to those learned from CADU, WADU and ADDP. There is a need for well trained extension staff in order to be able to effectively disseminate innovations. There is also a need for manpower and financial resources for an extension service that covers wider geographical areas.

What the experience from the MPP emphasizes more than the experience from CADU, WADU and ADDP is that for countries like Ethiopia where there is a wide ecological and social variation between regions, there is an urgent need for the continuous generation of new technological packages adapted to the varied conditions of the country. The limited experience from the MPP also emphasized the need for developing alternative extension approaches to disseminate innovations relevant to the socially and ecologically varied regions. Furthermore, although the MPP was designed to offer a lower cost package to a larger number of farmers throughout the country, it has not yet achieved this objective because it has not been able to develop an extension system that is markedly different from that of CADU.

IV. OVERALL ASSESSMENT OF THE ETHIOPIAN PACKAGE PROJECTS

Most development projects, such as the Ethiopian package projects, have multiple objectives. However, in Ethiopia as well as in most developing countries, evaluation of such projects and allocation of public funds for them is usually carried out in terms of benefit-cost analysis, internal rate of return, etc. that emphasize the economic efficiency objective alone. The shortcomings of these techniques is well known.[21/] Among other things, these techniques preclude considerations of dimensions of welfare other than the size and distribution of output. Moreover, the institutional barriers to the attainment of desirable distribution of output are ignored. It is therefore imperative that a multi-objective function be used.

Ideally, to put the multiple objectives in the form required for derivation of operational criteria for benefit-cost analysis of projects, the relative importance of the objectives must be specified. One method of specifying the relative importance of objectives is to weigh explicitly the contribution of the projects to each objective and to formulate project plans such that the weighted sum of the benefits is maximized. In this respect, the Ethiopian package projects should be evaluated in terms of their specified objectives, i.e., their output effects, their impact on income distribution and their employment effects using a ranking function that explicitly incorporates the planned targets with appropriate weights. Unfortunately, assumptions and expectations associated with the stated objectives have not been made very explicit for most of the package projects and most of the targets or achievement indicators are not amendable to quantification. Also some of the goals are often in conflict.

21/ See Marglin [1968] and Ward [1975].

For example, the objective of raising farmers' real incomes could easily be in conflict with the objective of narrowing the gap in income disparities. Moreover, information on employment and income distribution is either very sparse or totally lacking in most of the projects. Thus, the overall assessment of the package projects in Ethiopia to date has to be based on qualitative analyses of the impact on the projects on specified goals, such as income generation, income distribution, employment and local participation. It should be stressed, however, that the Ethiopian package projects in general and CADU in particular have played a key role in convincing policy makers that small farmers are economic men who make rational decisions and that agriculture can be an engine of growth for the economy as a whole.

Agricultural Output and Income

Wherever the projects have succeeded in promoting the adoption of improved agricultural inputs, substantial increases in output and income have resulted due to increases in yields per hectare and in area cultivated. For example, the annual income of the average farmer from the northern part of CADU is estimated to have increased from about Eth. $313.60 in 1966 to about Eth. $883.20 in 1971 just from his adoption of improved wheat varieties and fertilizer and the incremental income within Chilalo has been estimated to have increased from about Eth. $51,700 in 1968 to Eth. $1,654,000 in 1972 due to CADU activities [Holmberg, 1973]. Although not as high as reported by CADU, real incomes of adopters in WADU, ADDP and MPP have also risen. On the other hand,

incomes of those tenants that were displaced from farming by the rapid expansion of large scale mechanization within some of the package project areas and whose nonfarm employment opportunities were very limited, must have declined substantially.

Income Distribution

The impact of the projects with respect to income distribution should be viewed from two different perspectives. In so far as the package approach to rural development is adopted as a national strategy to cover the entire country, the projects' impact on regional income disparities ought to be considered. In so far as their primary aim is to benefit tenants and small owner-cultivators, it is necessary to examine how the benefits generated as the result of the projects have been distributed among the different income classes.

It is clear that the geographical impact of the innovations introduced by the projects has been limited to a few selected areas. All of the projects have so far concentrated their activities upon the most accessible and relatively fertile areas which have been assessed to have the highest possible response. By virture of the fact that these areas are more accessible and more fertile, they must have already been relatively well off. Obviously, therefore, disparities in income between areas reached by the projects and those that remain untouched have worsened.

Distribution of the benefits generated by the projects is governed by the way the innovations have been distributed between the various farming classes. Analysis of variance and covariance have shown the distribution of benefits to be very much parallel with the distribution of credit [Tesfai, 1973]. In general, landowners and/or bigger cultivators were accounting for a significantly larger proportion of the benefits, even though they constituted a relatively smaller proportion of the target population, because the feudal land tenure system favored the landlords and farmers with more purchasing power. First, tenants were finding it less rewarding to adopt new technologies when they had to pay as much as one-half of their gross output as rent. Second, the requirements for credit eligibility, such as the 25 percent downpayment requirement, seem to be restrictive enough to have excluded some potential tenant borrowers. It should be noted, however, that the difference in the distribution of benefits between tenants and landowners within CADU became insignificant after CADU revised its credit policy in 1969.

Another reason for the distortion in benefit distribution is the input distribution policy adopted by the projects. For example, a one hectare cultivator within the CADU project area was eligible for one quintal of fertilizer on credit while a twenty hectare cultivator was entitled to as much as twenty quintals before the March 1975 Land Reform Proclamation.[22/] On the basis of the projects' aim of narrowing the gap in income disparities between the smaller and larger cultivators alone, such input distribution policy cannot be justified. In fact, income distribution

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[22/] Within MPP areas the maximum amount of fertilizer sold on credit in 1974 for first year participants is six quintals and for farmers participating for the second year and beyond, the maximum amount of fertilizer sold is twelve quintals.

considerations would suggest that relatively more inputs per hectare should have been given to smaller cultivators until returns per hectare per unit of input start to diminish.

Employment

At least for the next twenty years the rural sector is expected to absorb most of the new entrants into the labor force if the unemployment rate is not to rise above its present level. The extent to which the package projects can contribute to the alleviation of the employment problem depends on how many new jobs can be created by intensification of production in the already densely populated highlands and to what extent projects like WADU are able to devise less costly settlement schemes.

Since substantial underemployment already prevails in most of the project areas, most of the additional labor required from more intensive cultivation will come from the underemployed. If there are new jobs created, the number will be very small and of a highly seasonal nature. The sharp increases in yields due to the use of improved inputs could have induced large scale mechanization if the March 1975 Land Reform Proclamation had not been introduced.[23/] On the other hand, WADU's settlement experience does not seem to provide an answer to a cheap means of creating a large

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23/ An estimated 500 to 550 tenant households are believed to have been displaced from the northern project area of CADU during 1969 and 1970 [CADU, March 1972]. During the first seven years of CADU's operation in Chilalo Awraja, it is estimated that about 2,000 tenants might have been evicted [Solomon, 1974]. It should be noted, however, that there are substantial indirect employment gains as a result of CADU activities. For example, by mid-1975, CADU had about 2,000 employees on its payroll of which 1,000 are daily laborers and 1,000 contract staff.

number of rural jobs. It is therefore apparent that intensification of highland agriculture through "intensive" and "minimum" package projects will generate very few new rural jobs.

Local Participation

Local participation programs are designed to encourage farmers and local government administrators to play a more active role in the decision making processes of the rural development projects. Participation of farmers was to have been promoted primarily through the establishment of cooperative societies (and since the Land Reform Proclamation through Peasant Associations) and that of goverment administrators by encouraging them to become members of various key committees involved in making important decisions that influence the progress of the projects.

Participation of local government authorities and other local influentials was not forthcoming as anticipated in the projects prior to the recent change in government. The major reason seems to have been a conflict between the vested economic and political interests of these individuals and the aims of the projects. The projects strive to create new local based democratic institutions at the grass roots level that would have a great potential to revolutionize the attitudes and the way of life of the Ethiopian peasants. But under feudalistic Ethiopia, where owning land meant owning economic and political power, it was in the interest of the officials to maintain the status quo. Furthermore, some government officials were exasperated with the fact that some of the projects' young Ethiopian staff were earning more than twice as much as they did. It was

therefore, understandable why most government officials and local influentials were hostile to the projects' activities, which by bolstering the confidence and self-reliance of the peasants, were preparing them to demand their basic rights from those same officials. Simply stated, the local administrative system under feudalist Ethiopia could not accommodate the rural development projects.

Even though the promotion of effective and efficient cooperatives is still at an early stage, it seems to be progressing at a much slower pace than was originally anticipated. Only one of CADU's thirty-two trade centers and six of WADU's thirteen group marketing organizations were registered as primary cooperative societies by the end of 1973.[24/] CADU's efforts, though very limited, seem to have been unsuccessful because its credit and marketing activities were not adequately integrated with its cooperative promotion efforts for at least the first five years of its operation. Since it provided free credit and marketing services through trade centers while trying to establish self-sufficient cooperative societies, farmers have been reluctant to join cooperatives where they have to incur some extra cost.

WADU seems to be making progress in the establishment of viable cooperative societies primarily because it has been operating its marketing and credit programs along cooperative lines from the outset. Besides, the Wolamo people seem to readily accept the concept of self-help, probably as the result of their familiarity with various traditional group activities. By July 1974, there were six registered and

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[24/] CADU's recent cooperative promotion efforts have yielded sudden and substantial results. By early 1975, the number of registered and pre-cooperative societies has increased to ten with a total of about one-thousand members.

seven pre-cooperative societies at WADU with a total of 9,160 members [WADU, August 1974]. Perhaps part of the explanation why WADU farmers have been more receptive is the fact that WADU has extended consumption loans to farmers. It should be noted, however, that the WADU cooperative program is highly subsidized since the salaries and other related expenses of WADU staff are not charged to the group marketing organizations.

There are a number of reasons why the rate of growth of cooperative societies has been slower than expected. First, the open membership policy prescribed by the country's cooperative law, prior to the 1974/75 political developments, allowed different classes of farmers, such as poor tenants and rich landlords, to be members of the same cooperative society. Since such cooperatives were usually controlled by the well to do minority, they were unable to generate an effective and genuine grass root movement. Second, cooperatives have so far been organizations that have been, more or less, imposed upon rural societies from above without making adequate educational preparation at the grass roots level and with the leadership having close ties with the government bureaucracy. As a result leaders of cooperatives were viewed with suspicion by the peasants and this suspicion was further reinforced by the abuse of authority and responsibility by elected cooperative leaders who were often accused of misappropriating funds. Third, closely related to the above point is the fact that paternalistic approaches are followed when organizing and promoting cooperatives instead of cultivating local aspirations and initiatives as the basis for generating the needs for such organizations by the peasantry. A good example is the WADU cooperative program which has so far been relatively more successful than others of its kind, but

still highly dependent on WADU paid staff to carry out most of its activities to the extent that the peasants themselves call it "the WADU Cooperative" instead of accepting it as their own organization.

V. EPID'S RURAL DEVELOPMENT PROGRAM OF THE 1975-80 PERIOD

At present there is no explicit government policy in Ethiopia that permits making any definitive statement about the government's strategy for rural development during the 1975-80 period. But indications are that more emphasis will be given to rural development than any other time in the past. It is being stressed that there is a need for generating increased participation by the majority of rural people in the overall national development effort so that a wider base is established. The lessons of "package" projects, particularly the MPP, will have a significant role to play in shaping any future national rural development program.

The Role of the Intensive Package Projects

The intensive package projects, namely CADU, WADU and ADDP, are too expensive to continue as pilot projects because they benefit only a very small percentage of the country's population. For example, CADU has spent about Eth. $37 million in its first seven years of operation and has served only one out of one-hundred "Awrajas" (districts) in the

country.[25/] Furthermore, as the intensive packages grew and their organization and administrative setting became increasingly complex, the ability of local government institutions to maintain and expand the services of these semi-autonomous projects was correspondingly diminished.

If the activities of the intensive projects are to benefit a relatively larger number of people over relatively wider geographical areas of the country, it is essential that they concentrate on those activities that have wider adaptability and those activities which could be easily taken over by local institutions. In fact, if EPID and the Ministry of Agriculture could be reorganized in such a way that all of their major internal and interministerial administrative problems are solved, it seems more appropriate (from the national point of view) for the intensive packages to be highly integrated into the EPID framework, perhaps as regional coordinating offices of the MPP.

The MPP During the 1975-80 Period

It was pointed out in part III that the 1971-74 period (Phase I) of the MPP mainly involved the provision of fertilizer and related agricultural extension services to farmers. Extension services dealing with cooperative marketing, animal husbandry and home economics, which began in 1974, were provided only on a pilot basis. For the 1975-80 period (Phase II), however, the intention is to gradually expand the components of the pack-

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[25/] Statement made by the Executive Director of CADU on September 4, 1974 to participants of the Second IDR Social Science Seminar held at Nazareth, Ethiopia, September 3-8, 1974; also see Tesfai [1973].

age to the extent that there will not be any significant difference between the existing intensive package projects and the minimum package areas [EPID, 1974].

Provision of agricultural extension services to small farmers will remain the major function of Phase II of the MPP. But based on the Phase I experience and the advise of an evaluation team from SIDA [Hunter, et al., 1974], EPID plans to adopt a flexible approach in designing the technological package suited to the numerous socio-ecological zones of the country. This implies that a wider range of improved agricultural inputs and the required methods for their dissemination must be developed taking into account the distinct features of the different areas to be covered by Phase II of the MPP. Nevertheless, fertilizer is expected to maintain its role as the dominant technological innovation.

Other components of the package that will be included in an improved manner are improved seeds, improved farm implements, crop protection measures, soil and water conservation measures, forestry extension, animal husbandry extension, home economics extension and input distribution and output marketing through cooperative societies organized by EPID [EPID, 1974]. Unlike some of the intensive packages, minimum package areas during Phase II will not have activities specifically dealing with rural water supply, rural health and family planning.

Proposed Rate of Expansion of the MPP

The MPP is planned to expand at the rate of ten minimum package areas or fifty extension areas per year throughout its Phase II period (Table 13). The target population will remain those highland farmers cultivating less than 20 hectares. There will not be any direct involvement on settlement schemes or provision of services to nomads.

Phase II of the MPP is designed in such a way that cooperatives will make a major contribution towards EPID's goal of enabling the target population to gradually assume all responsibilities regarding the distribution of inputs and the marketing of outputs that are now being undertaken by EPID's field personnel. The goal is to promote each marketing center in each extension area into a primary cooperative society such that fifty primary cooperative societies are established per year by 1980 [EPID, 1974].

Problems That Could Affect MPP's Phase II Planned Rate of Expansion

There are several unresolved assumptions that underly the rather optimistic 1975-80 design of the MPP. First, EPID expects fast implementation of the March 4, 1975 Land Reform Proclamation that redistributes land and/or improves the tenancy conditions if the MPP is to cater to primarily the poorer segment of the farming population. Fortunately there is a definite national commitment towards implementation of the Land Reform Proclamation, but it might not be effectively accomplished as fast as EPID would like to in order to attain its stated goals for the 1975-80 period.

Table 13. Actual and Planned Expansion of the MPP, 1971-79

Year	Minimum Package Areas	Extension Areas	Percent of Nation's Population Reached a/
1971	9	112	5.6
1972	18	154	7.5
1973	28	207	9.9
1974	48	347	16.1
1975	53	375	17.0
1976	63	425	18.8
1977	73	475	20.5
1978	83	525	22.1
1979	93	575	23.6

a/ Computed on the assumption that there were 4 million farm households in 1970 increasing at the rate of 2.5 percent per annum, and that the MPP will reach 2,000 farm households per extension area.

Source: EPID [1974].

Second, lack of feeder roads is already a major constraint on the MPP in some areas and it seems that the rural roads building organization that EPID anticipates for MPP Phase II might not come into being as early as EPID is hoping.

Third, EPID envisages that a major part of the activities it has initiated and it is currently undertaking under the MPP will eventually be taken over by the farmers, themselves, as self-reliant cooperative societies (and since the Land Reform Proclamation and peasant associations) are established. But, it is very difficult to develop viable primary cooperative societies within a short period of time.

Fourth, acceptance of the technical inputs, which are the backbone of the MPP, greatly depends on prices farmers receive for their incremental output. EPID anticipates that there will be a nationwide grain marketing and storage program to stabilize the seasonal and intra-year price fluctuations and improve the general efficiency of the marketing system. But, some serious questions are being raised on the potential success of the Grain Marketing and Storage Project [Ministry of Agriculture, March 1974].

Fifth, it was pointed out above that Phase II of the MPP is planned in such a way that fertilizer distribution will remain the major activity. But due to the forecasted world wide shortage of fertilizers for the next few years, EPID may have problems securing an adequate supply of fertilizer. Even if adequate supply is secured, high fertilizer prices might be unacceptable to farmers participating in the MPP without substantial government subsidy.

Sixth, the planned expansion of the MPP demands considerably more trained manpower than the existing training institutions can provide. It was indicated in Table 13 that EPID's manpower resources for MPP Phase I, particularly change agents, is already spread too thin to be as effective as was originally planned. Therefore, unless the government responds to EPID's demands by expanding essential training institutions the planned expansion of the MPP could be greatly constrained. Some of these problems will be treated in more detail in the next chapter.

VI. SOME CURRENT RURAL DEVELOPMENT ISSUES

Land Tenure Reform

The task of improving the lives of some four million rural families is too complex to be resolved without a strong national commitment to bring about major structural changes and willingness at every level of the society to accept such profound changes as land tenure reform. Prior to the March 1975 Land Reform Proclamation, the majority of Ethiopians in agriculture had poor access to the major productive resource, land and a very tenuous security of its use. Both of these weaknesses were related to the social and institutional structure which left access to and security of income largely dependent on the good will of a relatively small number of privileged landlords whose interest in owning land was for gaining political power and social status.

Tenants, which in Ethiopia amounted to at least 50 percent of the farming population, could not feel secure since their welfare was dependent solely on the judgment and good will of landlords, without objective means by which those judgments could be challenged. It is, therefore, understandable why the extremely inequitable distribution of land wealth acted as a bottleneck to economic growth and development by depriving the poor of sufficient incentive to work for higher productivity. There were a number of ways in which tenure arrangements were inhibiting improvements in productivity. First, for tenants supplying productive inputs in a share disproportionate to the division of the product, the rewards were not commensurate with the efforts. Second, farmers' expectations were insecure in the absence of land titles and written lease agreements.

Without a clear title to the land, a farmer was usually reluctant to make investments and engage in long term planning since he had no assurance that the land will remain in his possession in the future to be able to reap the benefits of such investments. Without a written lease, the time period of operation and the future rental rates were so uncertain that they were discouraging investments that had a recovery period of more than one season. Third, investments with recovery periods of more than the period of the lease were being discouraged in the absence of provisions for compensating unrecoverable portions of investments.

Concentration of land ownership and income distribution patterns, showing very low incomes and levels of living for the majority of rural families in feudalist Ethiopia, are well documented [Ministry of Land Reform, 1970; Hoben, 1973; Gill, 1974; Tesfai, 1973]. It is generally agreed, therefore, that the March 4, 1975 Land Reform Proclamation and the associated changes will accelerate rural development and increase the incomes of the rural masses. It should also be recognized that effective and productive implementation of the proposed changes will take some time and will not be easy. If effectively implemented, however, the Land Reform Proclamation will bring about many desirable changes in Ethiopian society. First, the initial redistribution of income resulting from the land reform will affect consumption patterns of the masses by encouraging them to eat relatively more of their agricultural produce and hence improve their nutritional level. (As a result there will likely be a short run reduction in the marketable surplus.) Second, the redistribution of income will also increase the rural demand for locally produced nonfarm products. Third, there will be a change in the pattern of capital formation as a high proportion of the savings and investments must come from the rural

areas. Therefore, there will be a challenge for government intervention to capture and redirect rural incomes toward capital formation while not adversely affecting rural life.

Trained Manpower

The supply of trained extension personnel remains one of the major constraints on the expansion of activities of the rural development projects, particularly the MPP, as can be seen from Table 14, even though the agricultural and community development training institutions have increased their output substantially in the last few years. It is, therefore, necessary to establish additional rural training institutions in order to overcome the manpower constraint.[26/]

Another problem resulting from the manpower constraint is the conflict between maximizing growth and attaining income distribution. The strategy of concentrating extension activities on selected "model" farmers and/or other more responsive farmers due to shortages in change agents may be the easiest way to maximize growth. But it may lead to widening income distribution if the majority of the beneficiaries happen to be the higher income farmers who usually are the early adopters, as has been the experience at CADU [Tesfai, 1973]. The projects now have programs that encourage participation of the target population in their activities. But very little progress has been made to date because there is not sufficient

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[26/] With nationalization of industries, land reform and changes in personnel in both central and local government administrations and the closure of the University and senior highschools, the constraint of available trained manpower is farther worsened--at least temporarily.

knowledge on how to organize rural people in order to intensify their participation in the development effort. So far the projects' overall approach to their target population has been very paternalistic, one that delegates little responsibility, as exemplified by the marketing subsidies that the projects offer to bail out participants from the major risks associated with marketing.

Table 14. Shortage of Extension Personnel for the MPP, EPID, 1974

Staff Category	Number of Posts Available	Number of Posts Filled	Number of Posts Vacant
Extension supervisor	74	56	18
Assistant extension supervisor	48	28	20
Marketing agents	233	140	63
Extension agent	212	233	--
Assistant extension agent	123	148	--

Source: "EPID Phase II--Proposal for the Expansion of EPID During the 1975/76-79-80 and for Support by SIDA," August 1974.

Transportation

The availability and cost of transportation is a major determining factor of how fast and how far activities of the rural development projects can expand and of the amount and location of marketable surpluses generated through their programs. In fact, the nation's overall objective of changing its subsistence oriented economy into one that is market oriented is very closely associated with the expansion of the transportation network. At present marketable surpluses are handled over medium and long distances by trucks and from the farm to primary markets mostly by donkeys, mules or human porterage. But the transportation charges vary depending on the availability of backhauls, the condition of the roads, the distance covered and the degree of competition among transporters on the route.

Within the CADU project area, for example, the 1972 transportation charges varied from Eth. $.10 per ton km., between areas connected by an all weather road and where availability of backhaul was assured, to Eth. $2.40 per ton km. in areas where only animal and human porterage was possible [Tesfai, 1973]. Therefore, an improvement in the transportation system would not only aid rural development by making it easier to disseminate activities to broader geographical areas, it would also result in larger marketable surpluses being generated from enlarged supply areas associated with each market and lower marketing margin resulting from reduced assembling costs and greater bypassing of intermediary markets.

The existing road network in Ethiopia is almost completely covered by EPID through the MPP and further expansion of EPID activities requires construction of more penetration roads. Therefore, the 1974/75 UNDP supported surveys of rural roads in the provinces of Harar, Gemu Gofa, Bale and Sidamo [IBRD, 1974] and the Sixth Highway Project, which will organize the construc-

tion and maintenance of a nationwide road network, should provide adequate considerations to EPID's planned activities for the 1975-80 period.

Marketing

Deficiencies in the marketing system have adversely affected the performance of the Ethiopian rural development projects. The intensive projects did not get sufficient support from government policy makers in raising prices high enough to generate incentives on the part of farmers to increase their output. In the absence of national price and marketing policies under the Imperial Ethiopian Government, the rural development projects' individual marketing efforts have resulted in substantial losses. Perhaps due to the view that the private marketing system is exploitative, the projects do not yet have any programs specifically geared to improving the private marketing system as an alternative.

There are several factors that are constraining the efficiency and effectiveness of the marketing system. Some of the important implications of a poor network of roads were underscored on the section on transportation above. Closely related to the transportation problem are lack of accurate and timely market information available to all levels of the market system, lack of established grades and standards, lack of an effective seasonal storage program at the farm level and government price control.

Market Information

Availability of market information is usually related to the size and extent of market involvement of each party in a given transaction. For example, the larger assemblers, who normally operate from their bases at the terminal markets of Addis Ababa, receive frequent price information directly from the major terminal markets by telephone, while the small farmers, on the other extreme, depend entirely on whatever they can learn from neighbors and local village markets. In general, therefore, the bargaining power of the smaller party in each transaction is weakened both due to its lack of adequate information and alternative market outlets leading to relatively poor farm level prices and low level of intermarket price relationships.

Grades and Standards

Grain marketing in Ethiopia does not follow any formally established grades and standards. Although the metric system is a well accepted standard system of weights and measures, numerous arbitrary volume measurements are used as standards, particularly in the primary markets and varietal differences are used as measures of inter-commodity differences in grades. In the case of teff, for example, at least three color-based graduations ranging from white to red are recognized in almost all markets. Grade classifications based on predominant colors is adopted because the grains produced and sold are composed of mixtures of varieties since the seed stocks are usually of an extremely mixed nature. Besides, local threshing methods (which are done by running oxen over the dried grain stalks on the ground) often result in weeds, seeds and foreign matter content that at times amount

to as high as 25 percent of the actual weight of the grain [CADU, August 1967]. Therefore, quality differences based on specific gravity, moisture content, level of impurities, etc. are only recognized informally by the marketing system.

There is a problem with enforcing standard weights and measures primarily due to lack of government checking of the scales used by traders. Besides, even if the scales used indicate the weights correctly, most sellers are forced to rely on the traders to tell them the indicated weight of their produce since they cannot read. A study at CADU [CADU, August 1967] has shown that on the average farmers could loose as much as Eth. $4.00 per quintal by false weighing and/or by incorrect calculation of what their produce is worth.

Storage

Most farmers are under considerable pressure to sell whatever marketable surplus they have within the first few months after harvest because borrowed money, taxes and other fees are usually collected during the harvest season. Even credit granted by the rural development projects is due right after harvest. Consequently, most farmers do not undertake seasonal storage other than that required to meet their own subsistence needs. A 1970/71 weekly grain purchasing program by CADU (Table 15) showed that, although the peak harvest time ranged between mid-December and mid-January, CADU was not able to make any purchases after April, indicating that farmers had by then sold whatever marketable surplus they had. This is in spite of the fact that effectiveness of the local storage system vis-a-vis improved ones was found to be very satisfactory [CADU, July 1971].

Table 15. Monthly Purchases of Grain, CADU, 1970/71

Month	Volume (Qt.)	Percent
November 1970	32,000	11
December 1970	8,200	28
January 1971	7,800	27
February 1971	8,000	27
March 1971	2,000	7
After March 1971	--	--
Total	29,200	100

Source: CADU, Statistical Digest [1971].

Price Control

One of the main problems with government control of prices is that it is usually aimed at achieving conflicting multiple objectives. On the one hand, its aim is to provide incentives to farmers to produce more by inducing them to increase their use of productive inputs such as labor and chemical fertilizers. On the other hand, its aim is to protect the urban poor from unreasonably high food prices. If price policy is to achieve both of these important, but conflicting, objectives, it can have some serious implications because it may require government expenditures in the form of input subsidy and/or product price subsidy and a cheap food program.

The Provisional Military Government of Ethiopia introduced a price control in early 1975 in which the prices of most agricultural products were

fixed. Since there is an acute food shortage in the country, one would normally expect that any government control of prices would be aimed at encouraging agricultural production. Unfortunately, it seems that the ceiling prices have been fixed at relatively low levels to the extent that the production of some major products might be discouraged, particularly since as the result of the worldwide inflation and petroleum crisis, the prices of the major farm inputs (such as fertilizers and pesticides) have escalated. In fact, the price policy was basically designed to benefit the urban population whose income is relatively higher than the rural masses. In the absence of a price subsidy program benefitting farmers, such a program has a regressive income distribution effect that should be untenable in socialist Ethiopia.

If the present price policy is allowed to continue for a long time farm incomes will inevitably decline due to low farm gate prices. This would consequently lead to a decline in purchasing power of the farming population, primarily of those consumer items that are usually produced by domestic small scale industries. Furthermore, the combination of low farm gate prices and high prices for farm inputs implies that the rural development projects will be adversely affected because farmers' incentives to adopt yield increasing innovations could be greatly diminished, leading to a reduction in food production in future years in spite of the growing demand for food. Besides, the March 4, 1975 Land Reform Proclamation may lead to a reduction in marketable surplus in the short run because of increases in onfarm consumption by the poor ex-tenants, lack of credit for essential farm inputs (oxen, seed, etc.) to ex-tenants and new urban-to-rural migrants and lack of capacity (at least temporarily) of small peasant farmers to effectively take over the previous commercially operated large scale farms.

New Technology

Perhaps a striking experience from China is that growth in agricultural production in the early part of the revolution was as the result of mobilization of traditional resources, especially labor, by designing development programs based on labor intensity through intensification of cultivation [Stavis, 1974]. But the increases in production could not be maintained after a few years because serious soil depletion ensured after years of intensive cultivation in the absence of chemical fertilizers, expansion of irrigation led to water shortages and increased soil salinity without expansion of energy sources. Thus, in order to increase production it was necessary to introduce major structural changes in the agricultural sector and to develop new agricultural technology. In short, what the Chinese experience shows is that social organization and mass mobilization are valuable complements to modern inputs but can never be substitutes for the development of new technology which is essential for continued growth of agricultural production [Stavis, 1974].

In Ethiopia, fertilizer distribution has completely dominated the extension work of the rural development projects to date, particularly the MPP, to the extent that their existence itself is in jeopardy if the fertilizer and product price relationships cannot be maintained at least at their 1973/74 level.[27/] EPID had some difficulty securing fertilizer supplies for the 1975/76 season that are estimated at about 35,000 tons of Di-Amonium Phosphate (DAP) and 6,000 tons of Urea at the staggering average price of Eth. $132 per quintal compared to only Eth. $57 per quintal in 1974 [IBRD,

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[27/] For detailed analysis of the implications of different fertilizer and product price relationships, see EPID [1974].

1974]. The subsidized DAP price of farmers in 1974 was Eth. $44 per quintal. If the subsidized price for 1975 is even assumed to be as high as Eth. $55 per quintal as suggested by the World Bank [IBRD, 1974], total subsidy will amount to about Eth. $30 million, compared to only about Eth. $1 million for 1974. This incremental subsidy cost of fertilizer alone would in one year completely exhaust the funds available to the MPP under the 1973-76 loan from the World Bank.

The fertilizer problem is probably a short-term problem that was brought about by the world wide shortage of fertilizers. But it has been, in one way, very useful in that it alerted EPID about the danger of concentrating rural development programs on one major innovation. It has also underscored the value of diversifying the search for new production increasing technologies. There is also a need for more precise fertilizer recommendations than what EPID has recommended to date on the basis of differences in soil types and/or cropping patterns of regions in light of the substantial difference in the price of nitrogenous and phosphate fertilizers.[28/]

The fertilizer recommendations for the MPP are based primarily on the FAO/FFHC trials which established that a 2:1 combination of DAP and Urea to be satisfactory for most regions of the country. This led EPID to de-emphasize the use of Urea as is reflected by the fact that Urea amounted to only 14.2 percent of all of the fertilizer sold during the first three years (1971-74) of the MPP [EPID, 1974]. But recent soil tests and fertilizer trials in some regions have shown some soil types are more

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[28/] The 1975 CIF Addis Ababa price for DAP is projected to be Eth. $160 per quintal compared to Eth. $75 per quintal for Urea [EPID, 1974].

responsive to Urea than to DAP. Fertilizer trials within the ADDP project area by the Debre Zeit Agricultural Experiment Station [Debre Zeit Experiment Station, 1974] have shown the black soils to be more responsive to nitrogenous fertilizers than to phosphate fertilizers, contrary to the standard EPID recommendations.

For the future, there are some promising innovations such as new maize varieties, new crops (e.g., haricot beans) improved labor intensive farm implements and improved cultural practices that should be given more attention. This would require close collaboration between the rural development projects and agricultural research institutes to work out the local adaptation problems of the new innovation to the different regions and/or ecological zones of the country before the innovations are disseminated.

Dissemination of Innovations

Some doubts are currently being cast on the value of the "model" farmer approach for an effective diffusion of innovations. For example, a survey of the extension activities at CADU indicates that the "model" farmers are useful in bringing about adoption breakthroughs (which in themselves are very useful because as "respected" men in their neighborhoods the support of the "model" farmers of any development project would carry some weight), but not so much in demonstrating innovations on their farms.[29/] As far as convincing farmers about the value of yield increasing practices such as high yielding seed varieties and chemical fertilizers, the agents' trial

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[29/] This is based on unpublished preliminary results of the evaluation of the extension program of CADU conducted by Micael Bayene in 1974.

fields and the "model" farmers' plots seem to have been effective as witnessed by the relatively large sales of these inputs by the projects. But these practices do not demand any major deviation from traditional farming systems as the farming practices, such as land preparing and timing of various farm activities are not significantly affected by the adoption of these innovations. In fact, once a farmer is convinced that fertilizer and/or improved seeds can raise yields that would more than cover the ensuing costs, the only major constraint is making the initial outlays (in the form of credit down payments) that would enable him to take the inputs on credit, particularly if the farmer is not a tenant.

The model farmer approach will not be appropriate in areas in which farming will be undertaken jointly through peasant associations in accordance with the March 4, 1975 Land Reform Proclamation, even for bringing about adoption breakthroughs. In such areas activities related to the dissemination of innovations should perhaps center around "model peasant associations". But such a strategy will require a different method of organizing an extension system than the present one based on model farmers because change agents will have to deal with groups of farmers instead of with individual farmers because farm decisions will be made by groups instead of individual farmers.

With respect to the dissemination of innovations whose impact is not so vivid, as is the case with fertilizer, and which require some changes in the traditional farming systems, e.g., crop rotation, row planting, improved farm implements, etc. there is very little information that explains the effectiveness of the projects' extension strategies. But some experiences from the MPP [EPID, 1974] seem to indicate that total reliance on inexperienced extension agents and their "model" farmers, without

facilities (e.g., manuals) that would provide specific instructions as to what to convey to farmers when confronted with differing farming problems, might not be appropriate with innovations that are complex enough to require some change in the traditional farming systems.

Peasant Associations

It is yet too early to safely predict what the implications of the recent political developments will be on cooperatives and/or peasant associations in particular and participation of local people in rural development programs in general. Nevertheless, there is an unprecedented upsurge in socialist mass movement throughout the countryside. A high tide of social transformation is sweeping over the whole country, especially in southern Ethiopia where tenancy was predominant and where consequently the Land Reform Proclamation is having the strongest impact, as more and more peasant associations are being formed every day. By the end of June 1975, about 13,000 peasant associations with a total of over 2,000,000 members had been established.30/

According to the March 4, 1975 Land Reform Proclamation (Appendix A) there will be one peasant association formed for each 800 hectare area to carry out the provisions of the Proclamation. Among the functions of peasant associations will be distributing land to association members; establishing judicial committees to hear land disputes arising within their area; providing the structure for agricultural services, such as marketing, credit and farm operations by establishing cooperative societies and labor

30/ Ministry of Land Reform and Administration.

associations; and raising resources and setting priorities for the development of social and economic infrastructure such as schools, clinics, roads, water supply, etc.

No clear directives have yet been given by the central government to guide the rapid formation of peasant associations. As the result, some errors are unavoidable in the process. One problem will be determining the appropriate size of peasant associations since the optimum size of an association will differ with the functions to be performed. Another problem will be concerning integration of associations that will be needed for raising resources necessary for the development of social and economic infrastructure. Furthermore, the pace at which peasant associations are being formed is much faster than the technical capabilities needed to serve the associations can be made available. This will inevitably create problems with those associations unable to get the promised, or anticipated, technical services.

It cannot be overemphasized that any tendency to concentrate the government's efforts solely on increasing the number of peasant associations and their membership to the neglect of their quality could have very harmful long run effects. Such problems can only be avoided if adequate planning and preparatory work is done before concentrating on increasing the number of peasant associations. The Chinese experience provides some valuable lessons in this [Wong, 1953]. Even Chairman Mao [Tse Tung, 1966] when reiterating the importance of adhering firmly to the principle of voluntary participation and mutual benefit in guiding social transformation along socialist lines, underscore the importance of drawing members into associations only when their political consciousness has risen and they have become interested. Chairman Mao states:

> . . . for various reasons, the degree of their (peasants) enthusiasm varies--some are very keen, some are not so keen for the time being, and others prefer to wait and see. Therefore, we should devote a period of time to educating all those who do not want to join cooperatives yet, even though they are poor or middle peasants, and we should patiently wait for their political consciousness to grow, and never drag them in against their will in violation of the voluntary principle [Tse Tung, 1966, p. 14].

After the completion of the land reform a step-by-step method was adopted in bringing about socialist transformation of agriculture in the rural areas of China [Tse Tung, 1966; Wong, 1953]. The first step was to organize temporary "producers' mutual aid teams" with labor in common based on the principle of voluntary participation and mutual benefit. These teams, which comprised not more than a dozen households each, contained only certain rudiments of socialism. The second step was to organize, again on the principle of voluntary participation and mutual benefit, small semi-socialist agricultural producers' cooperatives that would pool their land and labor resources in common under unified management. The third step was to further unite the small semi-socialist cooperatives into large agricultural producers' cooperatives which are fully socialist in nature with collective ownership of resources, still in accordance with the same principles of voluntary participation and mutual benefit. Such an approach, which enable the Chinese peasants to gradually raise their socialist consciousness through a gradual transformation of their mode of life and by lessening any feeling of an abrupt change, might be very useful in the Ethiopian case.

Administrative Organization

EPID was established as an autonomous department of the Ministry of Agriculture in charge of all integrated rural development projects because the services rendered by the different departments of the Ministry were not making any significant developmental impact. Furthermore, the organizational and administrative setting of the Ministry of Agriculture, in relation to other ministries, was not suitable for integrating rural related services rendered by different departments of the various ministries. The bureaucracy in the Ministry of Agriculture itself made recruitment of qualified personnel and generation of needed funds for development projects very difficult. Therefore, in order to overcome these serious administrative problems, it was felt easier to give EPID sufficient autonomy to run all rural development programs of the Ministry of Agriculture instead of reorganizing the Ministry as a whole.

Unfortunately, granting EPID substantial autonomy does not seem to have resolved some of the basic administrative problems at different levels of the organizational strata that have existed prior to the creation of EPID, as well as those that have cropped up after EPID was established. Most of the administrative conflicts between the Ministry of Agriculture and the other ministries still remain unresolved. For example, promotion of cooperatives is undertaken by the Ministry of Agriculture through EPID and the Ministry of National Community Development and Social Affairs with very little effort for coordination and without any common philosophy to guide them. It is not clear as to which Ministry is responsible for organizing and supervising the management of cooperatives. As a result, the efforts

of both ministries have been overlapping and occasionally to the detriment of the whole exercise of promoting cooperative societies.31/

The creaton of EPID and the semi-autonomous "intensive" package projects has led into considerable duplication of efforts by the Ministry of Agriculture and more so as the projects under the umbrella of EPID continued expanding both in terms of their intensity and the areas they cover. There were several departments within the Ministry of Agriculture that provided services through the provincial agricultural offices that were in charge of all agricultural extension programs before EPID and the package projects were created. But these offices are still operating, more or less, in competition with the package projects. It is, therefore, imperative that the Ministry of Agriculture is reorganized soon to avoid all unnecessary duplications in such a way that all field services by the existing departments of the Ministry are fully integrated under EPID and that EPID itself is decentralized by strengthening the regional coordinating offices which should also absorb the functions of the present provincial agricultural offices.

Upon the establishment of EPID, it was envisaged that all "intensive" package projects would maintain their autonomy to formulate and execute their own plans of operation and to administer funds allocated to them independently. But their activities and programs were to be closely coordinated with that of the MPP through the Planning, Evaluation and Liaison Division of EPID, which is also charged with monitoring the performance of all package projects under EPID and providing guidelines and advice to all projects

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31/ In July 1975, it was decided that the Cooperatives Department of the Ministry of National Community Development and Social Affairs will be moved to EPID making EPID the only agency responsible for organizing, registering and supervising the management of cooperatives.